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Editorial

The Winged Beast

The approach of Independence Day, 1940, finds us the last great Nation at peace, preparing in a good humored, rambling way to readjust our whole system of thinking and action to a new reality—the reality of the swift winged beast, which has replaced the four horsemen of the Apocalypse as a threat to our independence. For our independence so far has been a two-dimensional freedom. It faces now a three-dimensional threat, a new reality.

Independence is not priceless except in speeches. Our fathers in their time paid in full in courage, in money, in labor, in sweat and agony of soul and body for that freedom which we now enjoy so recklessly. But the end is not yet. The price has gone up and will rise again! Are we prepared to pay it? Nothing compels us. Part of the answer may lie in the character of the changes that have occurred in our educational emphasis in past years. This includes our informal education by the press, some advertising philosophy and practice, as well as the formal instruction in the schools. It includes also the effect of government propaganda, the impact of current literature, the screen, and the radio. Another part of the answer may lie in the extent to which the national imagination has been seduced by the power of expanding technology. This has produced the shorter-hour less-work concept, the better automobile, the elaborate school building, the bigger dam, the hard road, the larger hospital, better explosives, and the Spending-Program-for-Quick-Relief. What more could anybody want? Well, for one thing, the time to read the *Annals of Tacitus*, Dean Merivale's *History of the Romans Under the Empire*, and Mr. Beesly's *Cataline, Claudius and Tiberius*, also Mr. Gibbon's *Rise and Fall of the Roman Empire*.

Inevitably, the increased tempo of the dance of life has accentuated those centrifugal forces in the Nation which have favored

disunion We have had too much freedom that we haven't earned to broadcast as ours opinions that we haven't thought about but merely imported as we have imported cheap labor Slavery split us in half, but it was on this single issue that Lincoln said "A house divided against itself cannot stand "

Now we are divided on many issues as a result of the impact of imported doctrines upon an insufficiently nationalized population Our imported cheap labor has not proved so cheap after all What will the imported doctrines cost us? If a house divided against itself on a single issue cannot stand, has it a better chance divided on many issues, especially if the foundation is partly undermined? The mere spending of money on a new roof to hide the cracks will be of very little help

Physicians are realists, not politicians They have watched the growth of fascism threaten their professional independence, they have watched with apprehension the melting pot that did not melt They are aware of the third-dimensional threat They have to be For they will have to pay the rising price, as well as anybody else, of the defense of American independence from the winged beast

The National Guard

The issue arising over the President's request for authority to call out the National Guard is one that should interest physicians vitally The Guard is our first line reserve Its medical corps will be necessarily taxed to the limit of its considerable ability in the event that this Nation while reasserting its nonbelligerence, ends its fictional neutrality in respect to the European war This end is in sight Material rearmament is about to commence But moral rearmament is even more necessary

What could be more convincing than a demonstration to the people of the country that the medical aspects of preparedness were efficiently organized? It is immaterial for this purpose whether the President or Congress calls out the Guard Anxious mothers, jittery grandmothers, want reassurance that their sons' medical needs will be efficiently cared for Fathers, mindful of the ineptitudes of 1917-1918 might not be so bitterly skeptical if it were demonstrated to them that medical organization of the reserves in 1940 contemplated the placement of properly qualified physicians, surgeons, specialists, and technicians in jobs somewhat related to their qualifications and experience

It would appear that the Administration is heedful of the experience of 1917-1918 At the June meeting of the American Medical Association the government officially appealed to this body for help in mobilizing the profession This is certainly a step in the right direction

With the acceptance of this offer to help, we may be assured of a measure of efficiency not otherwise obtainable. Through state and county societies, the A M A can supervise the classification of medical personnel and its withdrawal from civil practice as the need arises. An additional advantage accrues also in that by this method of approach to the problem of medical preparedness no portion of the nation need be stripped of its practitioners. It is a proper and highly commendable application of the principle that control of medical needs and services should be left in the competent hands of physicians.

The Waifs

Physicians should read with care the *Physicians' Handbook on Birth and Death Registration* of the Bureau of the Census, 1939, for it points to the medical problems of the future. In spite of the rapid increase of the total population since 1800, a comparison of the age distribution for 1880 and 1930 indicates a much smaller percentage in the group under 25 years, due to a rapidly falling birth rate since 1915.

This problem of an aging population is one with which every country in Europe is familiar and which must necessarily be aggravated by the current practice of atomizing the young people and starving the infants to prove something or other, probably the dignity of man.

A by-product of this turmoil is a large refugee problem about which we are beginning to hear. Many of these are children in the age group under 25. Thousands are homeless. Other thousands are without parents or means of support—while we bemoan agricultural surpluses, a falling birth rate, and the loss of foreign markets. Is there not something wrong with this picture? The answer is—yes!

If we are to supply Europe with the materials of destruction, what better way is there to assure the foundations of Democracy than to demand in exchange Europe's homeless, unwanted children? Thus buttressed, we should have little to fear for the future. Or should we?

Bronchiectasis—Need for Prevention

Bronchiectasis occurs in one of two forms, either the cylindrical or the multisaccular type, according to the severity of the lesions and their location. The motivating factors in the production of bronchiectasis are the acute infectious diseases of the upper respiratory tract and chronic involvement of the nasal accessory sinuses,

particularly of the antrum of Highmore. The paroxysms of coughing and the profuse foul expectoration lead to general debility and marked dyspnea upon exertion. Bronchoscopic examination reveals a *dull red mucosa with granulations that bleed easily upon touch*. Of more import in diagnosis is bronchography with the instillation of lipiodol into both lungs.

Unfortunately, with the exception of lobectomy in certain carefully selected cases, treatment is palliative. Even bronchoscopic aspiration at stated intervals does not result in a cure but merely serves to lessen the severity of the symptoms. It is for this reason that it is so essential for both parents and physician to be aware of the dangers of constant postnasal dripping from a chronically infected sinus into the bronchial tree. Especially in children, thus, above all, will eventually produce a bronchitis, which, if not quickly remedied, becomes the forerunner of a bronchiectasis. Bloch and Francis¹ feel that the preventive phase of the subject has been definitely neglected and that there has been too much laxity in the attention given to the child suffering from sinusitis and mild forms of bronchitis. While in many instances a change to a dry climate will favorably influence these precursors of a bronchiectasis, there are others in which more intensive therapy to the focus is required. Unless these are carried out early and vigorously the incidence of this disabling disease will not decrease.

¹ Bloch R. G. and Francis, B. F. *Am Rev Tuberc* 38: 651 (1938)

Effective Preventive of Surgical Shock

The debilitated patient who presents himself for a surgical procedure, in whom there has occurred a marked loss in weight and strength and a secondary anemia, is most apt to go into shock during or following operation. It is easier to prevent shock than to treat it after it becomes manifest, and it is in this connection that the brilliant work of Perla, Freman, Sandberg, and Greenberg¹ is of outstanding clinical significance.

In 1933 Harrop and Weinstein² drew attention to the close similarity of acute adrenal insufficiency and shock. Perla and his associates, using the synthetic chemical hormone of the adrenal cortex—desoxycorticosterone—were able to prevent the appearance of surgical shock in elderly people who underwent extensive procedures such as resections of the colon and rectum, pneumonectomy, thoraco-

plasty, and amputations, among others. In addition to a high protein diet rich in vitamins and caloric values, sodium chloride is given by mouth in capsules of 10 Gm daily. For at least two days prior to operation, preferably for one week, the patient is given 5 mg of desoxycorticosterone daily, this is continued postoperatively, reducing the dosage gradually so as to permit the adrenals to resume functioning without a too sudden transition. The recent publication of Perla's report accounts for the lack of corroborative published clinical evidence as yet, but inquiry has elicited from surgeons who have used this means of shock prevention extremely favorable reports of its effectiveness.

¹ Perla, D., Freman, D. G., Sandberg, M., and Greenberg, S. S. *Proc. Soc. Exper. Biol. & Med.* 43: 397 (Feb.) 1940.
² Harrop, G. A. and Weinstein, A. *J. Exp. Med.* 57: 305 (1933).

VITAMIN K DEFICIENCY IN THE ABSENCE OF JAUNDICE

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(From the Gray Laboratory of the Roosevelt Hospital)

SPONTANEOUS hemorrhage has long been recognized to be one of the striking phenomena that result from an insufficient supply of vitamin C. Dam,¹ in 1929, suspected the existence of a second factor when he observed that chicks maintained on a fat-free diet developed a hemorrhagic diathesis. He subsequently extended these observations, noted that the development of the hemorrhagic state was accompanied by a fall in the prothrombin concentration of the blood, and gave the name "koagulations vitamin" or vitamin K to the specific dietary factor.^{2,3} This was shown to be a fat-soluble constituent of green leafy plants such as spinach and alfalfa,⁴ exerting a curative effect upon the hemorrhagic diathesis produced by prothrombin deficiency.⁵ Almquist and his associates⁶ likewise demonstrated that vitamin K is produced by bacterial action in putrefying fish meal.

Shortly thereafter, pure crystalline vitamin K was isolated in two forms K₁ from alfalfa and K₂ from fish meal.⁷ Both were found to be 1,4-naphthoquinones, differing slightly in chemical structure. Study of related substances revealed vitamin K activity only among 1,4-naphthoquinone compounds.⁸ Following elaboration of the chemical structure, several antihemorrhagic quinone derivatives were synthesized, 2-methyl-1,4-naphthoquinone is the most potent of these derivatives.⁹

An abnormal tendency to hemorrhage is one of the well-known complications of hepatic disease, especially in the presence of jaundice. This has been attributed to the development of progressively rising portal venous pressure

in cirrhosis and the rupture of varices. In jaundice it has been ascribed to increased permeability of vascular walls and failure of the coagulation mechanism, supposedly the effect of cholemia. Quick, Stanley-Brown, and Bancroft¹⁰ first called attention to the deficiency of prothrombin in the blood of jaundiced individuals. Hawkins and Brinkhous¹¹ demonstrated marked decrease of prothrombin in dogs following the establishment of complete external biliary fistulas. They further showed that the deficiency of prothrombin in these animals could be corrected by the feeding of bile salts with an adequate diet. The role of the liver in the maintenance of normal prothrombin values has been shown by the production of marked prothrombin deficiency in experimental chloroform intoxication.¹²

It thus became apparent that normal prothrombin values in the blood were dependent upon several factors. A sufficient supply of vitamin K must be available. Since it is a fat-soluble substance, its absorption, like that of the other fat-soluble vitamins, requires the presence of bile salts in the intestine.¹⁵ The absorptive function of the intestine must not be impaired. The liver must be functionally active.

Demonstration of the role of vitamin K in the maintenance of normal prothrombin values promptly led to successful clinical trial in cases of obstructive jaundice.^{13,14} These initial reports have been amply confirmed by many other investigators.

The majority of the communications dealing with avitaminosis K have discussed the incidence and clinical significance of this deficiency state in obstructive jaundice and in advanced hepatic disease. Prothrombin deficiency, how-

*With the assistance of Ruth Bach, M.A.

Read at the Annual Meeting of the Medical Society of the State of New York, New York City, May 9, 1940

ever, has been encountered in other conditions Brinkhous, Smith, and Warner¹⁶ first observed hypoprothrombinemia in normal infants, and an extremely low level in one case of hemorrhagic disease of the newborn It was shown subsequently that administration of vitamin K corrects this abnormality¹⁷

Snell and his co-workers^{14 16 18} have reported occasional instances of vitamin K deficiency in ulcerative colitis, polyposis of the colon, sprue, and gastro-jejuno-colic, fistula Stewart and Rourke,²⁰ likewise have observed hypoprothrombinemia occasionally in conditions other than jaundice and extensive hepatic disease

Recently, Kark and Lozner²¹ have reported 4 cases of avitaminosis K occurring in known deficiency disease of nutritional origin

Our experience indicates that significant vitamin K deficiency in the absence of jaundice or advanced hepatic disease may occur more commonly than is generally believed This warrants additional emphasis

Methods

The prothrombin determinations have been made on fasting blood using the method of Quick,²² with the exception of 2 early cases which were studied by the method of Quick, Stanley-Brown, and Brancroft¹⁰ We have considered abnormal a prothrombin time of thirty seconds or above In each case the fasting blood ascorbic acid values have been determined by the method of Farmer and Abt²³ In the accompanying graphs the prothrombin time is plotted in seconds The ascorbic acid is expressed in milligrams per hundred cubic centimeters of blood and is plotted against the normal ascorbic acid zone previously determined by studies of apparently healthy adults²⁴

Results

Two hundred and seventy-seven individuals presenting a wide variety of medical and surgical conditions have been investigated Seventy-one of these pre-

sented elevated prothrombin times Fifty-seven had no jaundice or other evidence of advanced disease of the liver or the bile ducts

TABLE 1—HYPOPROTHROMBINEMIA WITHOUT JAUNDICE OR HEPATIC DISEASE

Chronic ulcerative colitis	28	Chronic hemorrhagic diathesis	1
Peptic ulcer	9	Lung abscess	1
Regional enteritis	3	Cardiac insufficiency	1
Lobar pneumonia	3	Pernicious anemia	1
Gastritis	1	Retroversion of uterus	1
Carcinoma of stomach	1	Hypothyroidism	1
Acute appendicitis	1	Dietary deficiency	1
Carcinoma of rectum	1	Sprue	1
Postpartum hemorrhage	1	Banti's syndrome	1

The 57 cases of avitaminosis K without jaundice were distributed among eighteen different conditions (Table 1) It is important to point out, however, that the distribution is not statistically valid We have been particularly interested in chronic ulcerative colitis, peptic ulcer, and regional enteritis Consequently we have studied a disproportionate number of these cases in comparison with the other conditions listed It is important, however, to emphasize that vitamin K deficiency may be encountered in a wide variety of disease states In certain instances it may be clinically significant and accompanied by serious hemorrhage

Case Reports

Case 1—R P, aged 30, Italian housewife, gave a four-year history of chronic ulcerative colitis Five weeks prior to admission recurrence developed with increasing diarrhea and rectal bleeding Throughout this period her diet was restricted to farinaceous foods and boiled meats without fruits, fruit juices, or vegetables

Physical examination revealed nothing of note At proctoscopy the rectal mucosa was seen to be swollen, acutely inflamed, and oozing blood profusely The fasting blood cevitic acid was 0.2 mg per hundred cubic centimeters (Fig 1)

She was instructed to take a properly balanced diet and was followed in the outpatient department for two weeks She was then hospitalized because of continued diarrhea and blood loss and slight hematemesis on two occasions

On admission, the blood cevitic acid was 1.1 mg and the prothrombin time forty-seven seconds There was no jaundice On dietary management alone the blood vitamin C values

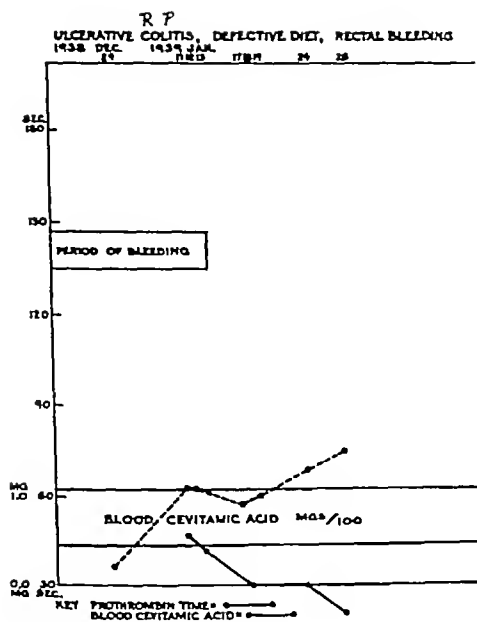


FIG 1 Vitamin K deficiency in the absence of jaundice

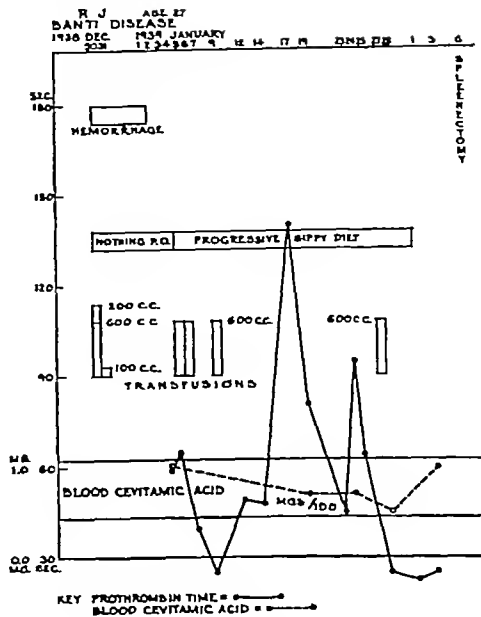


FIG 2 Vitamin K deficiency in the absence of jaundice.

remained within or above the normal zone and the prothrombin time returned to normal

Case 2—R J, aged 28, white American man, was admitted to the hospital on December 29, 1938, with a history of recurring attacks of hematemesis for twelve years, the last occurring three months previously. Laparotomy, with exploration of the stomach and duodenum, had been performed in 1928, and gastroenterostomy had been performed in 1933 because of suspected but unproved peptic ulcer.

On examination there was marked pallor. The superficial veins of the abdominal wall were distended and filled from below. The spleen was much enlarged, hard, and apparently fixed. The liver was not palpable. There was no ascites.

Admission blood count revealed hemoglobin 39 per cent (Sahli), erythrocytes 3,300,000, leukocytes 3,300, polymorphonuclears 74 per cent, lymphocytes 22 per cent, and monocytes 4 per cent. The platelet count ranged from 100,000 to 170,000 on repeated estimations. The icterus index was 4.6, the bleeding time two and one-half minutes, and the clotting time two minutes. Urinalyses were not abnormal. The Wassermann and Kline tests were negative. Gastrointestinal x-ray series, performed later in the period of hospitalization, revealed a much elevated left leaf of the diaphragm, a greatly enlarged spleen, cardiospasm with dilatation of the lower third of the esophagus hypertro-

phic gastritis, and a functioning gastroenterostomy with suggestive evidence of marginal ulcer.

Severe hematemesis occurred the day after admission and was repeated several times in the following forty-eight hours. His condition became grave, and repeated transfusions were required. Nothing was permitted by mouth until the seventh day when progressive Sippy regimen was begun. Subsequent exploration revealed an inoperable and greatly enlarged, widely adherent spleen with extensive collateral circulation. It was felt that the findings warranted classification within the group of the Banti syndrome.

The initial vitamin assay on January 4 showed a blood cevitic acid value of 1.1 mg per hundred cubic centimeters (Fig 2). The vitamin C values remained within the normal range throughout the period of observation. The prothrombin time, however, was fifty-nine seconds, and the day following, sixty-two seconds. A fall to normal was followed by a rise to two minutes and twenty seconds on January 17. Thereafter it fell to forty-five seconds and rose again to one minute and thirty-five seconds. Following this, it returned to and remained at the normal level.

There was no jaundice. The observed elevations of prothrombin time were not accompanied by further bleeding. Neither vitamin K nor bile salts were given.

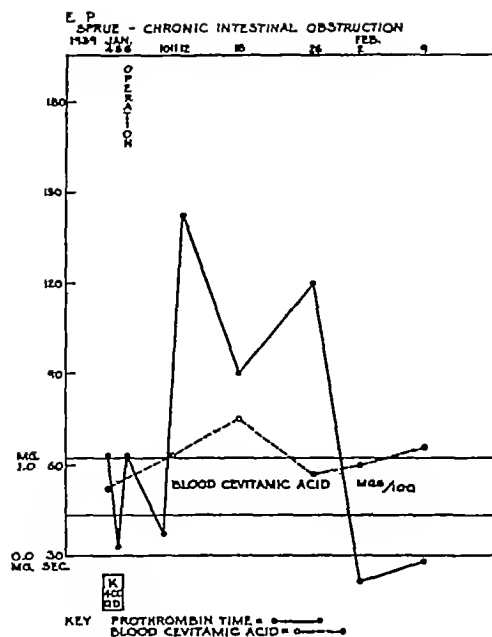


FIG 3 Vitamin K deficiency in the absence of jaundice

Case 3—E P, aged 35, American woman, first seen in May, 1938, gave a history of sprue, which developed in 1931 while she was a resident in the American tropics. A year later she was brought home in grave condition but responded well to dietary treatment. Relapses of active sprue recurred, however, every four or five months. Bilateral oophorectomy for cystic disease of the ovaries was performed in 1934, and supravaginal hysterectomy, because of endometriosis, in May, 1937. The latter procedure was complicated by postoperative hemorrhage requiring reoperation. In October of that year, following a period of gradually increasing symptoms of chronic intestinal obstruction, an acute obstruction occurred, necessitating surgical intervention. Obstructive symptoms recurred early in 1938, and partial resection of the small intestine was performed. During the spring and summer of that year she presented the picture of chronic sprue and progressing partial intestinal obstruction. In August it again became necessary to perform a laparotomy. The pelvic colon was freed from a mass of old adhesions. Similar involvement of the distal ileum could be only partly corrected.

Some improvement followed, but persisting signs of chronic obstruction necessitated readmission to the hospital in December. She showed a muddy pigmentation of the skin without jaundice. The tongue was red and somewhat sore. Painful distention of the abdomen

occurred daily, frequently requiring morphine, and visible peristalsis was present over the entire abdomen, accompanied by retraction of the right lower quadrant scar. The tendon reflexes in the lower extremities were diminished. There was no calf-muscle tenderness.

Macrocytic anemia of moderate grade was present. The blood calcium was 8.7 mg per hundred cubic centimeters. Glucose tolerance test gave a flat blood sugar curve with a high of 100 mg. Stools were liquid, fermenting, and contained excess starch, neutral fat, and fatty acids. Barium enemas revealed a flaccid, dilated colon without evidence of obstruction.

Laparotomy followed by direct transfusion was performed on January 6, 1939. An extensive mass of old adhesions, involving the terminal ileum, the cecum, and the ascending colon, was freed. Convalescence was uneventful.

Since the possibility of a complicating deficiency state was feared, repeated blood vitamin determinations, including prothrombin times, were made (Fig 3). The blood cevitic acid values remained in the normal zone, or above, throughout the period of observation. On January 4, two days before operation, the prothrombin time was one minute and three seconds. Consequently on this day and the day following she was given 4 cc. of vitamin K concentrate approximately equivalent to 2,000 units. Bile salts were not administered. On January 5 the prothrombin time was thirty-two seconds. On the morning of operation it had risen again to one minute and two seconds. On the fourth postoperative day it was thirty-seven seconds, and on the sixth day two minutes and twenty-two seconds. In the course of the next two weeks the prothrombin times fluctuated from one minute and forty-five seconds to two minutes, falling to normal at the beginning of the fourth week. Since there was no evidence of bleeding, neither vitamin K nor bile salts were given in the postoperative period.

Case 4—S. B., aged 21, white American man, was admitted in September, 1938, with a six weeks' history of severe and progressing ulcerative colitis.

He was much emaciated and pale. The tongue was smooth but not inflamed. Aphthous ulcers were present in the buccal mucosa. The skin was dry, and moderate hyperkeratosis was present. Hyperesthesia and paresthesia were present over the dorsum of the right foot. The right patellar reflex was less active than the left. Proctoscopic examination revealed an acute diffuse inflammatory process, which barium enema showed to extend throughout the colon. There was a moderately severe anemia with

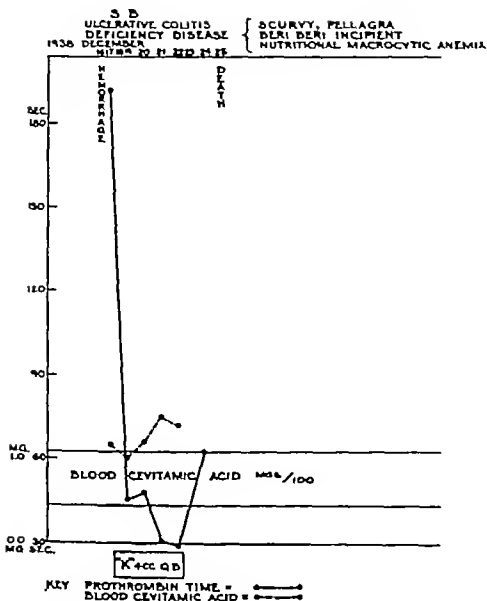


FIG 4. Vitamin K deficiency in the absence of jaundice

macrocytes and nucleated red cells in the stained film

During the succeeding weeks he presented many of the clinical phenomena of pellagra. This was controlled by parenteral liver extract and nicotinic acid by mouth. Two perirectal abscesses required incision and drainage. The patient's general condition became increasingly unsatisfactory with progressive weight loss, septic temperature, and slight hematuria.

By mid-December radical surgery seemed to offer the only hope, despite the recognized hazard. Ileostomy was performed on December 10. His condition remained reasonably satisfactory for five days. On the sixth day the situation suddenly became critical. The entire body was studded with petechiae. There was a massive subcutaneous hemorrhage involving the entire left leg and thigh. The ileostomy drainage consisted of tarry material giving a strongly positive benzedrine reaction, and there was gross hematuria. There was no reduction in blood platelets. Death occurred nine days later without further evidence of bleeding.

Because of a suspicion of subclinical scurvy, he was placed on 300 mg. of cevitamic acid by mouth daily immediately upon admission. Blood 'C' determinations thereafter (Fig 4) were within normal limits until November 4, when the blood cevitamic acid had fallen to 0.4 mg. per hundred cubic centimeters. The daily dose of cevitamic acid was then increased

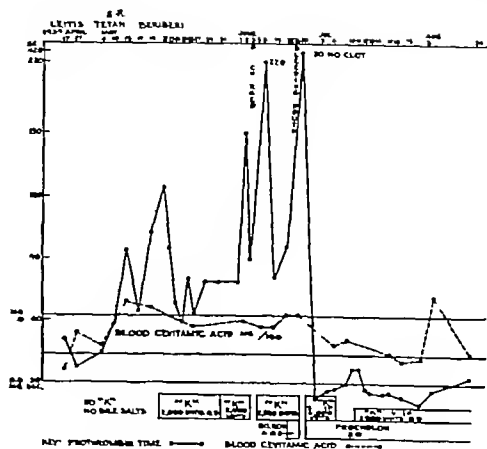


FIG 5. Vitamin K deficiency in the absence of jaundice.

to 400 mg. Meanwhile the diet was supplemented by the juice of four lemons each day. On December 8, two days prior to operation, the blood vitamin "C" was 0.7 mg. Although all medications were discontinued the morning of operation, fruit juices were given that day and each day thereafter. Soft diet was started the third postoperative day.

The sudden development of shock accompanying the hemorrhage on the sixth day made it impossible to do a blood vitamin determination prior to the institution of emergency therapy. This consisted of transfusion of 750 cc. of citrated blood and 10 Gm. of cevitamic acid, intravenously. Some hours later the blood vitamin "C" was found to be 1.3 mg. per hundred cubic centimeters. This finding, together with the value of 0.7 mg. two days prior to operation and the daily administration of fruit juices throughout the preoperative and postoperative period, led us strongly to believe that the bleeding was not the result of a cevitamic acid deficiency. The following morning the prothrombin time was found to be three minutes and twelve seconds. Vitamin K, equivalent to 2,500 units, was given by mouth on December 18, 2,000 units on December 19, 20, 21, and 22. Since there was no jaundice, bile salts were not given. On December 21 the prothrombin time had fallen to thirty-one seconds and on the following day to twenty-nine seconds. Two days after discontinuing the "K" concentrate, the prothrombin time again rose to sixty-two seconds.

Case 5—E R, aged 41, white American woman, was admitted on April 16, 1939. In 1936 she developed a remittent watery diarrhea, with six to seven stools a day without blood or mucus and unaccompanied by cramps or tenes-

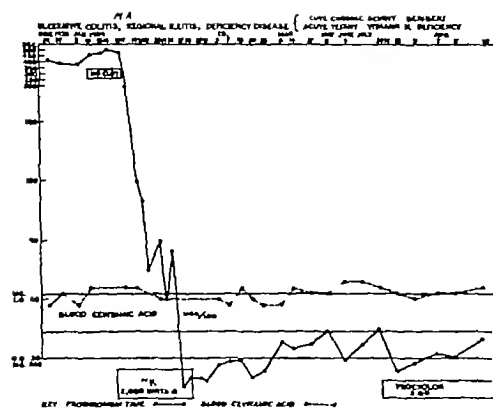


FIG 6 Vitamin K deficiency in the absence of jaundice

mus A diagnosis of mild ulcerative colitis was made in 1937. In July of that year panhysterectomy and appendectomy were performed. Convalescence was accompanied by further and progressive loss of weight.

In February, 1938, she was hospitalized because of an attack of hematuria. X-rays of the kidneys were said to be negative. She was told that her blood clotting mechanism was abnormal and was given three transfusions. Two months later she was again hospitalized because of neuritis of the left leg. There was a prolonged epistaxis and later a left saphenous phlebitis. Diarrhea recurred, and her weight fell to 78 pounds. Subsequently, blood appeared in the stools, and she began to bleed from the gums.

In February, 1939, she was transferred to another institution where a prolonged prothrombin time was found. She was treated intermittently with Klotogen and bilron. In the course of this admission an attack of acute tetany occurred, and later severe peripheral neuritis occurred with wrist drop, weakness of the muscles of the neck, and difficulty of deglutition. Treatment by intravenous thiamin chloride, intramuscular liver extract, and transfusion resulted in some improvement.

At this time she was transferred to the Gray Service of the Roosevelt Hospital. She was greatly emaciated, weighing only 73½ pounds. The skin was dry, scaly, and presented a diffuse, muddy, brownish pigmentation. A reddish indurated eruption with scattered purulent vesicles was distributed over the molar regions and the lids of both eyes. The abdomen was distended, tense, and tympanic. The superficial veins were somewhat dilated. The liver and spleen could not be felt. Patellar and achilles reflexes were absent. There was moderate calf-muscle tenderness.

The hemoglobin was 78 per cent (Sahl), erythrocytes 3,900,000. The serum calcium was 9.8 mg and the phosphorus 5.5 mg per hundred cubic centimeters. The icterus index was 3.5. Gastric analysis with histamine stimulation revealed a free hydrochloric acid of 111. The stools contained excess fat and fatty acid crystals. Roentgenologic examination of the small intestine showed an extensive sclerosing type of enteritis. The blood cevitic acid was 0.2 mg, and the prothrombin time was fifty-one seconds (Fig 5).

She was given a general, high caloric diet supplemented by large dosage of vitamins A, C, D, thiamin chloride, and brewers' yeast. Diarrhea was controlled by codeine and paregoric. No vitamin K or bile salts were given.

Sustained rise of the blood cevitic acid occurred immediately. The prothrombin time fell to thirty-seven seconds. Appetite improved and weight increased satisfactorily. The prothrombin time gradually rose to one minute and thirty-four seconds, then fell slightly and again rose to two minutes and five seconds. At this time daily administration of vitamin K concentrate, equivalent to 2,000 units, without bile salts, was started. The prothrombin time promptly fell to fifty-nine seconds. Thereafter it varied irregularly, finally rising to two minutes and thirty seconds and then falling to one minute and forty-five seconds. She was discharged from the hospital on June 3, 1939, much improved and weighing 93¼ pounds. Vitamin K was discontinued on this date.

Five days later the prothrombin time had risen to three minutes and forty seconds. Vitamin K concentrate, without supplemental bile salts, was immediately resumed in the same dosage. The prothrombin time again fell to one minute and twenty-four seconds and one minute and thirty-six seconds, one week and two weeks later, respectively. On the latter day an injection of liver extract was given into the right gluteal muscles. This was followed in a few hours by local swelling, pain, tenderness, induration, and subsequent slow appearance of ecchymosis. There was slight bleeding from the gums. On June 26 the daily dosage of vitamin K was supplemented by the addition of bile salts. Three days later large amounts of tarry stool were passed, accompanied by increasing pallor and weakness.

She was readmitted to the hospital. There were marked pallor, continuous oozing of blood from a small lesion on the face, scattered cutaneous ecchymoses, and a large ecchymosis of the right gluteal region and thigh.

The hemoglobin was 58 per cent (Sahl) the

erythrocytes 2,600,000, and the platelets 230,000. The blood calcium was 9.8 mg per hundred cubic centimeters. Glucose tolerance curve gave a fasting blood sugar of 89 mg and a high of 85 mg one-half hour after the ingestion of 50 Gm of glucose and 100 Gm of white bread. The blood vitamin "C" was 1.1 mg. Prothrombin was too reduced in amount to be demonstrable.

She was given a transfusion of 500 cc of citrated blood. A synthetic preparation of vitamin K equivalent to 6,000 units was substituted for the concentrate, supplemented by 0.7 Gm of dehydrocholic acid in divided dosage each day. On July 3 the prothrombin time was twenty-two seconds. There was no evidence of further bleeding. Three days later the prothrombin time was twenty-six seconds.

Vitamin K was then omitted and the dehydrocholic acid continued in the same dosage. In the course of the next week the prothrombin time rose to thirty-seven seconds. It appeared probable, therefore, that dehydrocholic acid alone would prove no more effective than vitamin K alone. It was not considered permissible to continue the experiment further. Consequently, daily administration of synthetic vitamin, equivalent to 2,000 units, was added. The prothrombin time promptly fell and remained at reasonably normal levels.

Case 6—M. A., aged 31, Jewish man, has been under our observation since September, 1932. At that time he had an active ulcerative colitis of three years' duration which responded completely and permanently to dietary and vaccine therapy. Roentgen examination, however, revealed, in addition to the colitis, an irregular, contracted cecum and what appeared to be a fibrosing and ulcerative lesion of the ileum. In 1935 symptoms of low-grade chronic intestinal obstruction developed. Operation was refused until March, 1937, when resection of the terminal ileum and proximal colon was done. The pathology was characteristic of regional enteritis.

In October, 1937, flatulence, distention, and diarrhea recurred. Stools were bulky, light in color, foul, and contained a large excess of fatty acids and undigested food. Subacute glossitis developed. He was treated as a case of non-tropical sprue without improvement. Shortly thereafter a severe and prolonged deficiency state developed characterized clinically by acute tetany, acute beriberi with edema, acute and chronic scurvy, and ulcerative lesions of the mouth and tongue.

The onset of the severe and lengthy hemorrhagic state coincided with a fall of blood cevi-

tamic acid to levels far below normal. Repeated blood examinations yielded normal platelet counts and leukocyte formulas.

Extraordinarily heavy dosage of cevitamic acid and large amounts of fruit juices were required. Ultimately he recovered and was discharged in the late spring of 1938.

He remained in good condition for several months, although moderate chronic diarrhea and distention persisted. The feces continued to be lightly colored and bulky and to contain excessive amounts of fatty acids. In the autumn of 1938 occasional moderately large hemorrhages from the gastrointestinal tract occurred. No source of the bleeding could be identified. Re-examination by x-ray revealed abnormalities of the small intestine suggestive of recurrence of the regional enteritis.

Repeated vitamin assays throughout the summer and autumn showed the blood cevitamic acid to be constantly within or above the normal range. The first prothrombin determination (Fig. 6) gave no clot formation. In the course of the next three weeks, six additional determinations showed complete failure of clot formation.

From January 16 through January 28, vitamin K concentrate, equivalent to 2,000 units, was given each day. Since there was no jaundice, bile salts were not given. The prothrombin time promptly fell to normal levels. Vitamin K administration was then discontinued.

During the following months the prothrombin time gradually rose to forty-five seconds on July 20. Dehydrocholic acid 0.7 Gm a day in divided dosage was started at this time and continued without supplemental vitamin K. The prothrombin time fell and remained at levels only slightly above normal.

Discussion

Vitamin K is known to be present in many different foodstuffs, and it is said to be produced in the intestinal tract by bacterial action. It is a fat-soluble substance which requires the presence of bile salts for absorption. The formation of prothrombin necessitates not only vitamin "K" but a functionally active liver. It is apparent that vitamin K deficiency may arise in several different ways. Exclusion of bile from the intestine by obstructive jaundice or external biliary fistula may block absorption. Insufficient secretion of bile acids will act similarly. Disease or altered physiology of the intestine, by impairing

the absorptive function, may produce this avitaminosis even in the presence of adequate sources and a functionally active liver. And finally, defective diet alone may produce this type of deficiency, despite the theoretical source of the vitamin from intestinal bacterial action.

In view of these facts, it is obvious that vitamin K deficiency may occur in a variety of conditions unaccompanied by jaundice or evidence of serious liver disease. The cases that we have studied emphasize the clinical importance of this deficiency. They demonstrate that it may occur to a serious degree in the absence of jaundice. And they illustrate certain of the potential mechanisms that may produce avitaminosis K. Thus, Case 1, after a period of grossly defective diet, presented a blood cevitic acid value well below the threshold for scurvy and an elevated prothrombin time. Change of dietary alone corrected both defects. In Case 2, an advanced Banti syndrome, no other deficiency, was demonstrable. Elevated prothrombin time was observed on the sixth day of starvation and during the early stages of the Sippy regimen. Its occurrence under these conditions and the subsequent drop to normal without therapy suggest that starvation rather than intrinsic liver disease was responsible. In Case 3, sprue, complicated by chronic intestinal obstruction, a slightly elevated prothrombin time immediately prior to operation became markedly abnormal in the post-operative period, returning to normal as convalescence was established. The rise of blood vitamin C is to be explained by the daily administration of 1.0 Gm of cevitic acid in infusions. Although the absorption mechanism of the intestine was unquestionably impaired, the curve in this case suggests that in the presence of a defective prothrombin mechanism the immediate results of surgery may be to precipitate a potentially serious vitamin K deficiency. Case 4 was characterized clinically by probable scurvy in the early stages, pellagra, macrocytic anemia, and incipient beriberi, with a background of severe progressive ulcerative

colitis. The development of these deficiency states points to inability to utilize dietary sources of essential substances. However, vitamin K concentrate given without bile salts was completely and promptly effective in restoring the prothrombin time to normal. Case 5 likewise presented a severe mixed deficiency disease complicating regional enteritis. Vitamin K given without bile salts appeared to be only irregularly and incompletely absorbed. It was not effective over a prolonged period of time. Similarly dehydrocholic acid alone seemed to be insufficient. Vitamin K concentrate and synthetic vitamin K in equivalent dosage when given with dehydrocholic acid maintained the prothrombin time at reasonable levels. In Case 6, likewise an instance of chronic regional enteritis, vitamin K alone sufficed to restore the prothrombin time to normal levels. Subsequently, when a moderate secondary rise occurred, dehydrocholic acid without vitamin K proved effective.

Summary and Conclusions

The vitamin K status of 277 miscellaneous medical and surgical cases has been investigated by determination of the Quick plasma prothrombin time. Fifty-seven were found to have hypoprothrombinemia in the absence of jaundice or other evidence of advanced hepatic disease. Six of these, 3 of them complicated by severe hemorrhage, are presented in detail. There was 1 case of Banti syndrome, 1 case of tropical sprue complicated by chronic intestinal obstruction, 2 cases of ulcerative colitis, and 2 cases of regional enteritis. Physical examinations and icterus indices did not demonstrate advanced hepatic disease. Precipitating factors appear to have been defective diet, defective absorption from the intestine, and major surgical procedures.

1 Elevated prothrombin times have been observed in 57 nonjaundiced patients. The primary diagnoses in this group include eighteen medical and surgical conditions.

2 Severe grades of vitamin K de-

ciency, at times complicated by dangerous hemorrhage, may occur without jaundice and with a normal icterus index

3 Correction of a defective diet alone may suffice to restore an elevated prothrombin time to normal

4. In certain cases without jaundice, vitamin K alone or dehydrocholic acid alone will suffice, in others bile acids and vitamin K are required

5 The response of certain cases to the exhibition of dehydrocholic acid alone suggests a qualitative or quantitative defect of bile secretion

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SOMETHING NEW AT THE "BLOOD BANK"

A new method of banking blood for emergency transfusing, which eliminates the necessity of type selection, is being "used successfully" at the Buffalo Children's Hospital, Dr Erwin Neter, laboratory director, said on May 4, as quoted in a Buffalo newspaper

"Instead of storing whole blood, we preserve only the plasma—fluid minus the cells—which can be safely injected into an emergency case without regard to the patient's blood type," Dr Neter explained

Plasma has certain advantages over blood, he added

"It can be kept indefinitely. Blood in storage deteriorates in two weeks because the red cells dissolve," he explained.

"In cases where life is threatened and speed is a determining factor, plasma is exceptionally useful.

"Often a special type of blood is not quickly available. In using whole blood it takes time to make sure that the donor has a suitable type for the receiver. Otherwise it may be fatal to the patient.

"When wrong blood cells are given, they usually form clumps and dissolve, causing a severe shock throughout the body"

Dr Neter pointed out, however, that plasma

"will not make whole blood transfusions unnecessary"

"There are cases where whole blood is necessary, particularly when the red cells in the patient are very low. If time is important, we bolster the patient immediately with plasma, then follow by whole blood transfusion"

On the other hand, plasma is more effective than blood, in persons low on water and protein contents and whose blood cells are not diminished, he continued

"Plasma transfusions are exceptionally good for shock—when the volume of blood circulating through certain parts of the organs is diminished. Injected into the patient, it increases the amount of circulating fluid bringing about a quick revival," he said.

Dr Neter explained that whole blood is composed of approximately equal parts of cells and fluid plasma

"In obtaining plasma, the donor is first tested to see he has no contagious diseases. The whole blood is then filtered to remove clots and centrifuged for an hour at a speed of some 2,000 revolutions per minute.

"Culture tests are made for bacteria. The golden-colored fluid is then stored into vacuum containers, ready for indefinite service"

YOUR TITLE IS "M D"

Let us as physicians, endowed with the degree M D, start to place emphasis on that degree. No one else can use it. Use "M D" in your speech, in your correspondence, on your signs, prescription pads, bill heads, etc. Gradually

the public will start to discriminate. In this positive way we can gradually but most effectively offset the parasitic influence of so-called "doctors" who are not M D's—*Rochester Medical Bulletin*

CLOSED *VERSUS* OPEN REDUCTION OF RECENT FRACTURES

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OUR object in presenting this controversial subject is to demonstrate the success of closed reduction in a large series of recent fractures. These fractures were cared for promptly with adequate hospital facilities and by surgeons specially trained in the closed method. Having observed how infrequently open interference is necessary in fresh fractures, we have come to advocate its use only in special instances. Meticulous care, precision, and special skill are required in no less degree in closed than in open reduction. The closed method is highly successful when carried out under controlled and favorable conditions. The technical ability of the surgeons, the training of the operating team, the efficiency and coordination of the resident staff, x-ray department, and nurses are matters of essential importance in successful application of the closed method.

Terms used in this discussion must be clarified before proceeding further.

1 *Recent Fractures, Fresh or Acute Fractures*—These of course, are relative terms. They imply fractures that come to a surgeon directly and promptly (one to six hours), first aid alone having been administered.

2 *Closed Reduction*—This treatment implies the *indirect* application of reduction and maintenance forces. Essentially, it excludes the use of cutting instruments at the site of the fracture but allows the use of traction and transfixion devices, weights, and such means, as well as manual manipulation.

3 *Skeletal Traction*—We consider this form of treatment a closed method. There is *indirect* application of reduction and maintenance forces. The break in

the skin is at a site removed from the fracture.

4 *Open Reduction*—This term implies an operative approach to the site of fracture with opportunity for *direct* application of reduction and maintenance forces.

5 *Compound Fractures*—The site of the fracture is or has communicated with a break in the skin. Though these fractures receive soft part and at times bony debridement, they may still be subject to closed methods of reduction and maintenance.

Objectives of Fracture Treatment

It may be well to review the objectives of fracture treatment generally agreed upon. These are (1) to save life, (2) to obtain a maximum of painless function, (3) to obtain a minimum of deformity and shortening, (4) to reduce hospitalization to a minimum, (5) to restore full activity as soon as possible.

Methods of Fracture Treatment

Since time immemorial closed reduction has been applied to fractures. There is much evidence that the application of this method, even in prehistoric and in early historic times, was most skillful.

"Records of fracture treatment come to us from 4,500 years ago. Breasted and Smith after examining about 5,000 mummies found that about 5 per cent had fractures, many with splints in place. These fractures had been treated logically and gave excellent results even under our standards of today. Principles enunciated 4,500 years ago are sound today."¹

However, it is only in very recent times that open reductions have been generally practicable. The development of aseptic

surgery during the last fifty years has made the open approach feasible. This, of course, does not mean that no open corrections were performed before the last half century. "As early as 1854 we find that Brannard condemned the use of wires and foreign bodies of every description as a means of promoting the formation of callous."² Undoubtedly, at this early date open interference was reserved for the delayed, nonunion, and malunion groups.

With the development of aseptic surgery and modern methods of anesthesia, fractures can now be approached by open operation with a minimum likelihood of infection or additional trauma. Concurrently, various improved closed methods have also been developed, and skin traction has been supplemented or replaced by skeletal traction using pins, tongs, and, more recently, wires.

Definition of the Problem—To narrow our discussion down to the most controversial matters, certain fractures that rarely require reduction of any sort may well be eliminated. These are fractures of the skull, scapulas, ribs, and pelvis. Moreover, it is generally accepted that displaced fractures of the patella and olecranon and many displaced fractures in or about the joints, particularly condyles of the humerus, head of the radius, and neck of the femur, require open correction.

Factors Favoring Open Reduction

As already mentioned, increased safety of open correction, as far as the dreaded bone infection is concerned, has been achieved during the last half century or less. This has permitted surgeons greater freedom in the use of this method.

General surgeons who are accustomed to resolve problems with the scalpel are inclined to approach fractures by the same means. Similarly, the more modern orthopedic surgeon is inclined to approach a recent fracture with the same operative technique used for the case of nonunion and malunion.

The advent of the x-ray has over-emphasized, in the minds of the surgeon,

the patient, and others, the bony structure of the body and has led to a desire to produce finished "cabinet-maker" effects in fracture treatment.

The surveillance of fracture cases by laymen, particularly claim agents, lawyers, and juries, all of whom are more likely to look at and evaluate the x-ray rather than the injured part, has increased pressure for the best skeletal rather than the best functional restoration.

A reduction of hospitalization by six to twelve weeks is possible in some instances by deciding upon the open method. This is, of course, a powerful factor.

Advantages of Open Reduction—The following are admitted advantages of open reduction.

- 1 Anatomical reduction can usually be secured
- 2 Internal splintage can be applied
- 3 The convalescent period may be shortened
- 4 Union is said to be more certain
- 5 The aftertreatment is simplified
- 6 Mobility of adjacent joints may be more readily maintained

Disadvantages of Open Reduction—On the other hand, the following may be considered the disadvantages of open reduction. In discussing these disadvantages, we indicate the alternative advantages of closed reduction.

- 1 The operation converts a simple into a compound fracture, and there is always danger of infection. This means osteomyelitis.

- 2 If reduction has been obtained, even if there is internal fixation, it must be maintained in most instances by adequate *external* splintage.

- 3 Nonabsorbable foreign material left in operative wounds, particularly those involving bone, is still, at times, an irritating factor.

- 4 When autogenous bone grafts are used, the operative procedure is prolonged, complicated, and the risk increased. Frequently a second incision is required to provide the necessary graft.

- 5 Contrary to one's expectation, union is frequently slower. Moreover, it is not by any means certain

6 A scar is added to any possible deformity resulting from the fracture

7 A more prolonged anesthesia is often required than in closed reduction

Factors Favoring Closed Reduction

As indicated earlier, the type of fracture service—its administration, its accessibility, its personnel, and its equipment—largely determines the most suitable method of fracture treatment

An ambulance service provides rapid transportation of the injured person to the hospital for treatment. In New York City, patients with fractures of extremities who are brought to the hospital by ambulance have the extremity properly supported by a Thomas splint with fixed traction. In recent years, the attending staffs of these hospitals have been pleased to observe that many fractures of the long bones are reduced and maintained in excellent position by this method of transportation. They are thus challenged to maintain this excellent position.

It is axiomatic that early reduction is easy reduction. Where a service is so organized that members of the attending staff are available on short notice and are prepared to reduce or splint fractures within a couple of hours post-trauma, the percentage of successful closed reductions is increased. To have x-ray facilities always available enhances proper early closed treatment.

There are, of course, personal factors that are especially important in the successful use of the closed method. These factors include not only the necessary grounding in the anatomy and physiology of the neuro-musculo-skeletal system, careful training and wide experience in the care of injury, but also skill, strength, and dexterity, fortified by a natural aptitude in this field. The fracture surgeon should be imbued with reasonable assurance and confidence in his ability to carry the manipulation to a successful conclusion. We must not be too ready to give up attempts at manipulation and resort to open correction.

Factors, in General, Contrasted

Factors favoring open reduction are largely those extraneous influences—such as the development of asepsis giving greater safety, the improvement of x-ray equipment, emphasizing bony contour and detail, the gradual intrusion of the layman reviewing and making decisions about these cases, and the ever tantalizing desire to reduce hospital expense.

Factors favoring closed reduction are largely those of efficient hospital and staff organization and accessibility of a hospital to the scene of the accident. Personal factors of training and the attitude on the part of the responsible surgeon admittedly influence the selection of method of fracture treatment.

Methods of Closed Reduction

In reviewing the methods of closed treatment of recent fractures that have been successfully applied, this survey will necessarily cover mainly the extremities excluding intra-articular fractures. This is evident from the foregoing. As already indicated, treatment of these cases is begun by the ambulance surgeon at the scene of the accident. The case arrives at the hospital by ambulance in fixed traction. Preliminary x-rays frequently show satisfactory reduction which merely has to be maintained.

Maintenance is of two general types—*first*, application of plaster splintage, using anterior and posterior molded splints and occasionally casings, *second*, application of skin or skeletal traction by means of Kirschner wires, or by the use of fixation wire or wires through the casing. The specific approach to certain common fractures is referred to in more detail in the succeeding paragraphs.

Shoulder Fractures—The common fracture of the shoulder girdle is, of course, the fractured clavicle. In this fracture, the fragments are usually overlapping. The common method used is the application of a well-padded figure-of-8 bandage. This may be supplemented by a pressure pad over the outer portion of the medial



FIGS 1A, 1B, 1C Fracture shaft of the humerus 1A on admission, 1B with union—four weeks' skeletal traction, anteroposterior view, 1C lateral view

fragment. This method has the virtue of easy application and great comfort to the patient. End results are uniformly satisfactory with very little permanent deformity or disability.

The common fracture of the upper end of the humerus is that of the surgical neck. Greater tuberosity fractures and impacted fractures of the surgical neck merely require support by means of the Velpeau or modified Velpeau bandage, with early institution of shoulder shrugging exercises followed within one to two weeks by guarded active motion, heat, and gentle massage.

Displaced fractures of the surgical neck have been treated with a high degree of success by means of skin traction with the arm adducted to the side or even across the body and with the elbow extended. Marked overriding with considerable abduction and external rotation of the proximal fragment is ordinarily

corrected by using this method which depends so much upon the controlling action of the long head of the biceps. Reduction having been obtained, the adduction position is continued for ten to fourteen days, and then gradually abduction is instituted until 90-degree abduction is obtained, usually in about three weeks. Union is ordinarily sufficient at the end of four weeks to permit ambulation, with the extremity supported by a sling. Physical therapy, in the form of heat, massage, and active motion, may then be instituted.

Arm Fractures—Fractures of the shaft of the humerus are notably a source of difficulty and disappointment. Nevertheless, by judicious use of skin traction or skeletal traction through the olecranon, all reductions have been maintained and union has been obtained with only one exception. Unsatisfactory results are usually due to too much traction, six

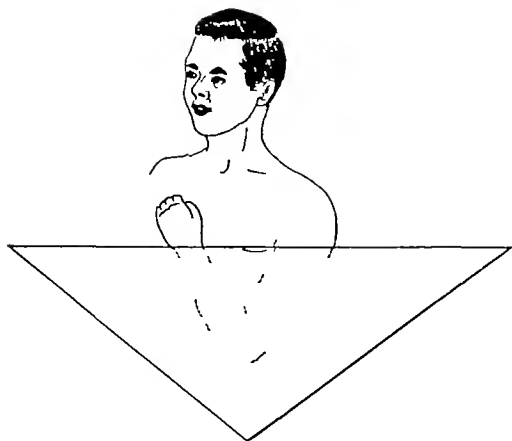


FIG 2 Triangular sling applied to maintain Jones's position—first step

pounds being maximal. Overtraction unquestionably causes nonunion. Traction is applied so that the arm is abducted about 45 degrees, the rope passing through the pulley of the Blake board and the forearm extending toward the ceiling with the elbow at right angles. A sling is passed under the arm preventing posterior angulation. When x-ray confirms good reduction, a coaptation splint is added and the sling continued. When union is firm, which is usually at about the fourth week, these cases can safely be transferred to long anterior and posterior splints, which extend from the wrist along the entire extremity crossing one another at the shoulder and encircling the chest. The extremity in these splints is further supported by means of a sling. The splints are removed for daily heat and massage treatment, and in an additional two weeks, active motion of the shoulder and elbow may ordinarily be applied. In some instances an aeroplane splint has been used instead of plaster splints (Figs 1A, 1B, 1C).

Elbow Fractures—In this section we are considering only supracondylar fractures. The epicondylar, condylar, head of the radius, chip fractures of the coronoid, and many fractures of the olecranon often require open reduction. The supracondylar fractures are reduced within one to three hours of accident and, ordinarily, swelling is not extreme. Reduction is



FIG 3 Triangular sling applied to maintain Jones's position—application completed

attempted by manipulation, which consists of increasing the deformity to overcome impaction if some exists, distal traction, and anterior displacement of the distal fragment. This maneuver can ordinarily be performed by the operator unassisted, if he clasps the elbow in his hands with the thumb overlying the distal portion of the proximal fragment, the index finger pressing against the distal fragment, and the middle fingers against the olecranon. When reduction is obtained, the elbow is placed in acute flexion, the radial pulse being observed. Reduction can be adequately maintained by means of modifications of Jones's bandage. For this purpose, a triangular sling can be handily used, applied as shown in Figs 2 and 3. Postoperatively, the pulse should be carefully observed with recording by nurse or physician every hour. The degree of flexion must be lessened if there is any suspicion of circulatory impairment.

Forearm Fractures—Displaced fractures of one or both bones of the forearm have long presented great difficulty to the surgeon. In reviewing our series it is noted that complete displacement of both bones occurred only in 1 out of 6 fractures of both bones, approximately 50 per cent of the rest of these fractures had complete displacement of one or the other of the bones. The rest had either partial displacement or no displacement or angulation or no bony deformity whatsoever.

Reduction of these doubly displaced fractures was obtained by closed methods in a very high percentage using the following three-man technic. The elbow is ordinarily held at 90 degrees by one assistant who also produces counter-traction. A second assistant grasps the wrist and hand, producing traction while the operator angulates and manipulates the bony fragments at the fracture site. The necessity for spreading the proximal and the distal fragments from one another to counteract the pull of the pronator and supinator above and the pronator quadratus below must always be kept in mind. The use of the fluoroscope following manipulation has been of great assistance in confirming reduction. The application of anterior and posterior molded splints extending from the axilla to the fingers with the elbow at 90 degrees and the forearm in mid-supination has been the usual method of immobilization.

Wrist Fractures—Fractures of the lower end of the radius and ulna, the Colles' type of fracture, are ordinarily readily reduced when seen early. The well-recognized manipulation of increasing the deformity and then applying distal and anterior traction with ulnar deviation ordinarily reduces the impacted types. Reduction is confirmed clinically by noting the relative position of the styloids, the absence of palpable bony deformity, and the absence of any tendency toward recurrence of the deformity. Immobilization is secured by means of anterior and posterior molded splints extending from the knuckles to the elbow. The sugar-tong splint, which encircles the

elbow, is preferred, as this type of splint prevents pronation and supination and thereby immobilizes the fragments more securely and protects the often damaged inferior radio-ulnar joint. The flexion position is maintained for ten to fourteen days. Then new splints are applied with the wrist in midposition between flexion and extension or in cock-up position if the nature of the fracture and its healing permit. Ulnar deviation is insisted upon throughout immobilization in order to reduce the possibility of compression of the radial fragments and recurring deformity of radial deviation. Finger motion is encouraged throughout. Special therapeutic measures, consisting of heat and massage, are not practicable at our hospital until the third or fourth week, when the splints are discarded.

Hip Fractures—Intracapsular fractures have been treated by transfixion with the Smith-Peterson nail in the instances where the patient's general condition permitted. Intertrochanteric fractures have been almost uniformly treated by means of Russell traction. This well-known means of traction readily produces and maintains reduction. The patients are quite comfortable in it. Union is ordinarily solid by the end of six weeks. We are particularly insistent in guarding against external rotation, inasmuch as fixed contracture in the position of external rotation will be difficult to overcome at the end of six weeks. Weight bearing is usually begun at about this time, using a walking caliper brace for protection. About 20 per cent of our cases require Russell traction for a greater period, varying from nine to twelve weeks. There has been no instance of nonunion at this site.

Thigh Fractures—Fractures of the shaft of the femur are also treated by Russell traction. At this site the posterior angulation or bowing deformity must be carefully avoided. Intelligent and well-trained nurses will prevent this occurrence by seeing that a pillow is always firmly placed behind the thigh, thus supporting it, the knee, and the leg. Reduction is obtained with surprising ease and main-



4A

4B

Figs 4A, 4B Fracture, femoral shaft—on admission 4A anteroposterior view, 4B lateral view

tenance is not difficult. Here too, with the first attempt at weight bearing, the extremity is supported by a caliper brace. Otherwise a much increased period of bed rest is required in order to prevent an untoward incident with refracture or weakening of the newly formed callous. The supracondylar fractures of the femur and the fractures of the tibial condyle can ordinarily be treated by manipulation and application of a plaster casing. In the former, traction suspension may be substituted with the knee in considerable flexion to relax the pull of the gastrocnemius. In the latter, forcible percussion by means of mallet over a felt pad or the "nut cracker" technic may be required (Figs 4A, 4B, 4C, 4D).

Leg Fractures—This comprises a large group of our cases. A surprising number are nondisplaced and are treated by application of casing extending from the toes to the upper thigh. The displaced fractures after transfixion are reduced and maintained by the casing. If they are

oblique, spiral, or comminuted (as so many of them are), a Kirschner wire is passed through the upper posterior portion of the calcaneus, and traction suspension is advised by means of a Thomas splint with Pierson attachment. Ordinarily, in adults eight to twelve pounds traction is required. Portable x-ray confirms reduction. When union is in the early stage (that is, at a period between three to six weeks), we frequently transfer the extremity to a plaster of paris casing. This can be safely done by applying a molded plaster of paris posterior splint to the foot, leg, and thigh without disturbing the traction and suspension. When this splint is thoroughly strong, all suspension devices are removed, but traction is maintained by means of Kirschner wire, rope, and pulley. Sufficient padding is then placed about the extremity, and the casing is completed by roller bandage of plaster of paris. Several assistants are required, but the use of this technic reduces the necessity



4C

4D

Figs 4C, 4D Femoral shaft with union—four weeks' Russell traction 4C anteroposterior view, 4D lateral view

of bed rest for several weeks. Sixteen of our cases in this category have been treated by means of double wire fixation. In using this technic, manipulation of the fragments is performed on the fracture table. Reduction is maintained by means of fixed traction. Kirschner wires are inserted through the tibia above and below the fracture site, and a casing is applied. When the casing is hard, the traction is released, but the wires are maintained taut by means of traction bows. At the end of about forty-eight hours, special lugs are applied to keep the wire taut, and the traction bows are removed. The wires are cut flush with the lugs. Patients become ambulatory at a very early stage.

Ankle Fractures—Fractures of the lower end of the tibia and fibula, including the Potts type of fracture, are ordinarily readily reduced when seen early. With the knee acutely flexed and secured by an assistant, the heel and foot are firmly grasped. It is rarely necessary to increase the deformity, as impaction is

not a common feature in this type of fracture. Acute inversion and marked dorsiflexion are obtained in a continuous maneuver. Emphasis is placed upon the acute inversion and dorsiflexion in order that the deformity may not recur. A circular plaster of paris casing, extending from the toes to the knee or to the upper thigh in those cases in which the posterior articular margin of the lower end of the tibia is fractured, is applied. When this casing has hardened, it is slit anteriorly, or a one-half-inch longitudinal segment is cut down its anterior surface. Such a casing is worn from three to five weeks. When first removed, the posterior shell is preserved, and the ankle is supported in this shell while heat and gentle massage are applied daily. Partial weight bearing with crutches is usually possible between the fourth and sixth week.

Illustration

As a concrete illustration of these general remarks, we wish to review briefly

TABLE 1—COMPARISON OF OPERATING ROOM REDUCTIONS WITH TOTAL OF FRACTURES TREATED

	1935	1936	1937	1938	Four-Year Total
No of recent fractures treated at Gouverneur Hospital	422	531	400	295	1 648
No of total requiring operating room reduction	61	74	85	81	301
Percentage of total requiring operating room reduction	14.5	13.9	21.2	27.5	19.3
Percentage of total requiring open reduction	1.7	2.5	1	1.7	1.7

the experience of the Fracture Service at Gouverneur Hospital

During recent years the physical and administrative setup of the hospital has been much improved. Proper emergency treatment is available on the ambulance. Adequate x-rays are taken on the patient's admission and a member of the visiting staff is promptly available for early care of these cases. The members of the service have set for themselves the goal of obtaining a maximum number of successful closed reductions, and this has spurred them on to a special effort. A survey of the late and end results through monthly follow-up clinics indicate that the closed method has been thoroughly successful.

In four years, 1935-1938, 1,648 cases of recent fracture have been treated. It is rather surprising at first glance that approximately only one-fifth of these fractures have required reduction in the operating room (Table 1). One must consider, however, that fractures of the skull and the bones of the face, the clavicle, mandible, ribs, scapula, vertebra, and pelvis rarely require either closed or open manipulation. In addition, a certain number of fractures of the long bones are nondisplaced and merely require immobilization. Furthermore, of the displaced fractures a certain number are treated by skin traction and suspension. From a consideration of these factors, it is evident that the sum total of manipulative and operative procedures is proportionately small. Out of 301 cases requiring anesthesia and any procedure in the

TABLE 2—CLASSIFICATION OF OPERATING ROOM REDUCTIONS

	No of Cases
Closed Reductions	
Humerus	25
Colles type fracture of forearm	88
Other type fracture of forearm	14
Potts type fracture of leg	35
Other type fracture of leg	26
Femur	13
Pelvis	2
Patella	3
Foot and toes	7
Hand and fingers	6
Clavicle	1
	220
Skeletal Traction	
Humerus	6
Femur	7
Leg	31
Calcaneus	6
Hand and fingers	2
	52
Open Reductions	
Humerus	4
Forearm	13
Femur	7
Patella	2
Leg	3
	29
Total	301

operating room, there were 29 open corrections, 52 cases requiring Kirschner wire insertion, and 220 closed reductions. The gross open operative incidence was, therefore, 1.7 per cent (Table 2).

In analyzing the open reductions (Table 3) the greatest number were of the shafts of the radius and ulna. There were 6 such cases, all of which were seen and treated within six hours of injury, 2 of which had one attempt at closed reduction and 4 of which had two attempts. One of these cases required Lane plates to maintain reduction. Another case, a fractured shaft of the radius, after two closed attempts required open reduction. There were 4 cases of operative treatment of the fractured head of the radius, 1 of the shaft of the ulna, 2 of the olecranon process. The neck of the femur was subjected to open reduction in 5 instances and the shaft in 2 instances. The humeral condyles were operated upon in 3 instances and the surgical neck in 1. The shafts of the tibia and fibula were operated upon in 3 instances, once for treatment at the same time of a bone cyst.

To bear more closely upon the center of our controversy, this list of 29 cases could be further reduced by eliminating

TABLE 3—ANALYSIS OF THE OPEN REDUCTION

Site of Fracture	No of Cases	Prior Attempts at Closed Reduction		Type of Open Reduction
		1 Attempt	2 cases.	
Radius and ulna (shaft)	6	2 Attempts	4 cases	Lane plate (1 case), drill holes and suturing (4 cases), simple open realignment (1 case)
Ulna (shaft)	1			Drill holes and suturing
Radius (head or neck)	4	1 Attempt	2 cases	Excision of head
Ulna (olecranon)	2			Drill holes and suturing
Femur (neck)	5	Leadheader (2 cases)	maneuver Whitman spica all 5 cases	Albee reconstruction (1 case) Smith-Peterson pin (2 cases) wires through head (1 case) Open realignment and drill holes for 1 case of slipped femoral epiphysis
Femur (shaft)	2	Russell traction	both cases	Bone graft (1 case) drill holes and suturing
Humerus (condyles)	3	1 Attempt	2 cases	Drill holes and suturing (2 cases) excision of internal condyle (1 case)
Humerus (surgical neck)	1	1 Attempt		Open realignment
Tibia and fibula	3	1 Attempt	2 cases	Sliding bone graft (2 cases) beef bone peg (1 case)
Patella	2			Suturing (1 case) drill holes and suturing (1 case)

15 cases where the fracture involved the extremity of the bone, leaving 14 cases wherein it was necessary to perform open reduction on the shaft of the long bone. It should be pointed out that no open operative correction was required on the shaft of the humerus, only 3 on the shaft of the tibia, 2 on the shaft of the femur, and 8 on the shafts of the radius and ulna. The insertion of Kirschner wires was used mainly for fractures of the tibia and fibula and occasionally for fractures of the shaft of the humerus. Skin traction was commonly used for humeral shaft fractures and Russell traction for fractures of the shaft of the femur. The difficult, displaced fractures of the radius and ulna were successfully reduced by manipulation in most instances, displaced fractures of the upper end of the humerus by skin traction in adduction.

Conclusion

Our experience, reviewed in detail in this study, has convinced us that closed reduction is a highly successful method in the care of recent fractures. Its uniform and almost invariable success in this series is due to a number of important factors. These include proper first aid, prompt application of closed methods of skin traction, wire transfixion or manipu-

lation, and thorough understanding of the utility of these methods and confidence in their success. The use of wires for skeletal traction or for double wire distraction and fixation has unquestionably reduced open reductions to a minimum. The incidence of 29 open corrections in 1,648 cases of fracture, an incidence of 1.7 per cent shows how rarely such interference is necessary.

Summary

1. The advantages and disadvantages of the open and closed methods of reduction in recent fractures have been reviewed.

2. The low incidence of open operative reduction in an active and closely supervised fracture service has been illustrated.

3. In four years, 1,648 cases of recent fracture have been treated. In this series it has been necessary to do an open operation only 29 times and to use internal plating only once.

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BLOOD GOES WITH THE WIND

In England and France there is a fleet of aircraft to carry blood from the depots in which it is stored to the hospitals and front lines. A wire crate containing ten bottles of blood is the unit for dispatch. There are insulated boxes for the airplanes, each of which holds two crates. The boxes are insulated, and ice is put into them

during the flight. This ensures that the temperature inside the box will not rise more than five degrees centigrade in eight hours. In times of food scarcity, in countries with restricted food rations, blood donors will be given extra rations to maintain the quality of their blood.—*Medical Record*

CLASSIFICATION OF MORBID CONDITIONS GIVING RISE TO PAROXYSMAL CARDIAC PAIN

Diagnosis and Therapy

H L RAKOV, M D , Kingston, New York

(From the Department of Cardiology, Kingston Hospital)

THE time has come when the indiscriminate use of the term "angina pectoris" must end. Too many active, useful citizens have been frightened into semi-invalidism by the casual application of this sinister term to their ailment. To the man on the street, angina pectoris means sudden, painful, suffocating death. Once his condition is so labeled, the jig is up. He is through and is a parasite on family or friend. It behooves us men of medicine to weigh the facts carefully before the verdict is delivered. The innocent man is often condemned to die and the guilty pronounced innocent. Far too frequently, the patient, after being reassured his trouble is only a "little indigestion" or "gas," drops dead within a few hours, and "angina pectoris," coronary sclerosis, acute indigestion, malignant angina, or some other equally indefinite cause of death is given.

The terms "coronary artery disease," "coronary sclerosis," and "angina pectoris" have, of late years, frequently been interchangeably employed and similar clinical syndromes ascribed to each. Much confusion has arisen as to just what "angina pectoris" signifies. Most of us would describe "angina pectoris" as a paroxysmal painful sensation over the precordium, tending to radiate, associated with immediate cessation of activity, and relieved by rest, nitrites, and morphine. This is entirely a clinical syndrome with no positive ascribed pathology. Therefore, the term "angina pectoris" should be definitely discarded and in its place the term "paroxysmal cardiac pain" employed.

The following clinical pathologic classification has been of value to me and is offered in the attempt to clarify this confusion.

- I Paroxysmal pseudocardiac pain—pain about the precordium, not of cardiac origin, frequently called "pseudoangina."
- II Paroxysmal benign cardiac pain—pain about the precordium in which the pain arises in the heart, but pathologically there is no evidence of coronary artery disease, rather a qualitative or quantitative disturbance of the coronary circulation. This was frequently called "benign angina."
- III Paroxysmal malignant cardiac pain—a pain arising about the precordium, associated with definite pathology of the coronary arteries, called by some "malignant angina."

In paroxysmal pseudocardiac pain, the pain is not associated with either a disturbance of the coronary circulation or actual coronary disease. The origin of the pain is entirely extracardiac. One of the most common causes of such is the pain arising from osteoarthritis of the spine. The arthritic pain may be referred over a large area of the chest and to the shoulder, it occurs in individuals past middle life and is associated with exercise of the upper extremities. Gas imprisoned in the splenic flexure will produce pain radiating upward over the precordium and in addition will produce dyspnea, pallor, and rapid pulse. A multiplicity of other causes may be mentioned, such as diaphragmatic hernia, pneumothorax, pneumonia, gallbladder crises, duodenal ulcer, splenic infarct, renal calculi, etc.

Probably the most frequent cause of paroxysmal pseudocardiac pain is the syndrome neurocirculatory asthenia. The

etiologic factors in most cases are ordinary wear and tear of life with their resulting anxiety states, bad habits of living, and to some extent heredity. We are all familiar with the symptoms—tachycardia, nervousness, irritability, fatigability, anorexia, loss of weight, cold clammy hands, precordial hyperesthesia, breathlessness, and sighing reflex.

The paroxysmal pseudocardiac pain of neurocirculatory asthenia is more prevalent among women of unstable nervous systems. This pain is usually stitching and cutting in character rather than pressing or constricting. The pain frequently occurs in individuals who have lost a close friend or relative from coronary artery disease or who have nursed people with this disease. It is altogether too easy to give these individuals a hypodermic of morphine for their "attack" and leave them with a diagnosis of "angina pectoris" and a semi-invalid for life. Many of these people need the treatment of a skilled psychiatrist and would be much better off in such hands. It has been aptly said that in order for one to do good medicine he should be a psychiatrist in the cloak of an internist.

It is well accepted that a painful sensation arising in the heart itself is due to myocardial ischemia or anoxemia from inadequate blood supply. Any factor that increases the need of the heart muscles for blood or diminishes the coronary flow may produce pain. The pain may be produced by overwork when the blood supply is normal. A normal blood supply may be inadequate under conditions of stress. A diminished blood supply may be inadequate under conditions of minor stress.

In paroxysmal benign cardiac pain, the pain is associated with a disturbance of the coronary circulation without actual coronary artery disease. This disturbance may be either quantitative or qualitative. If we believe that acute disproportion between coronary flow and metabolic needs of the myocardium is the underlying cause of the "anginal episode," then anemia may produce this episode in the absence of diseased coronary arteries. In simple anemia or in pernicious anemia,

the myocardium is receiving an inadequate qualitative blood supply. Cabot states that he has seen 3 cases of typical angina associated with pernicious anemia and without coronary disease. In 1927 Herrick reported 4 more cases.

A low blood sugar level will produce paroxysmal benign cardiac pain due to lack of available carbohydrates for adequate cardiac nutrition. Thus, hypoglycemia, due either to lack of intake of carbohydrate or overdose of insulin, can produce paroxysmal cardiac pain, since heart muscle to function adequately requires dextrose as well as oxygen.

Physiologists have demonstrated that the coronary circulation is largely dependent on blood pressure and, in particular, the diastolic pressure. The coronary arteries fill during the diastole and early part of the ventricular systole. During the greater portion of the ventricular systole, the coronary flow is cut down to a minimum, in spite of increased intra-aortic pressure, by compression of intramuscular branches of coronary arteries. Thus we frequently note the paroxysmal benign cardiac pain in individuals suffering with hypotension.

Dynamic studies by Wiggers have shown that the faster the heart beats, the more the systolic output or stroke volume is decreased. It follows thus that an attack of paroxysmal tachycardia can bring about a diminished coronary flow with resulting paroxysmal benign cardiac pain.

Clinicians are well aware that smoking has a vasoconstrictor effect upon the peripheral arteries. Physiologists experimenting with nicotine have shown that even in small doses it has a vasoconstrictor action on the coronaries. Clinically, I have seen any number of young individuals, heavy smokers, with paroxysmal cardiac pain, who have been relieved upon abstinence from tobacco.

A decreased coronary flow has been observed when digitalis is administered to experimental animals. It is assumed to be due to a coronary constrictor action of digitalis. The indiscriminate use of digitalis in patients with normal rhythm but

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Probably the most frequent cause of paroxysmal pseudocardiac pain is the syndrome neurocirculatory asthenia. The

with The patient complains of dyspnea on exertion, with no pain, or paroxysmal nocturnal dyspnea

The atypical group, usually noted in older patients, may be characterized by fainting attacks with pallor, great restlessness with sweating, or congestive heart failure, but no pain

At this time, it would be well to discuss those attacks which manifest none of the symptoms or signs of coronary occlusion but obtain relief with either nitroglycerine or simple cessation of activities. We are compelled to feel with Robert L. Levy that, in some cases, we are dealing with an acute coronary insufficiency and not a thrombotic lesion of even small coronary twigs. Lewis M. Katz, of Chicago, states "In the presence of coronary disease, any abrupt increase in the work of the heart or any abrupt drop of blood pressure in the aorta may cause acute coronary insufficiency and gives a spasmodic character to the clinical picture." This may be compared to another type of insufficiency, commonly called intermittent claudication, which is due to an arteriosclerotic process in the peripheral vessels. The patient, while walking, experiences cramplike pains in the calves of the legs with coldness, difficulty in locomotion, and loss of dorsalis pedis pulse. With a short rest, all symptoms disappear. Further, vasospasm of the coronary arteries must also be a factor in the production of these attacks. Physiologists have demonstrated coronary constriction by vagus stimulation. How else can we explain the almost immediate comforting relief from nitroglycerine in these minor episodes of paroxysmal cardiac pain present in coronary sclerosis?

Although about 20 per cent of cases of coronary sclerosis reveal no clinical cardiac abnormalities upon careful investigation, the following procedures may be of aid in establishing a diagnosis

- 1 History—An accurate history is important. Let the patient tell his own story, describe the pain and radiation, what brings on the pain, and what relieves it. Dyspnea is

the most frequent symptom, next, paroxysmal cardiac pain, and then gastrointestinal symptoms. Brown and Riesman state that a history summarized by these five adjectives is conclusive: sudden, brief, vague, anterior, exertive. In my experience, the relationship of the attack to exertion and relief with nitroglycerine have been great diagnostic aids

- 2 Physical examination—Hypertension is often present. Cardiac enlargement may or may not be present, but any unexplained cardiac hypertrophy is usually of coronary origin. A mitral systolic murmur is most often heard. Split heart sounds may or may not be present.
- 3 Electrocardiography—The electrocardiogram is a graphic record of the electrical activity of the heart and no more. It is only an adjunct to other clinical methods of diagnosis. To make a diagnosis of coronary sclerosis from such a reading is an unsound practice, although at times it is possible. Electrocardiography will reveal abnormal changes only in the presence of myocardial damage

The following electrocardiographic changes may be suggestive of coronary sclerosis with myocardial involvement: (1) coronary T wave of Pardee, (2) inverted T₁ or T₂ and RS-T interval changes, (3) changes in lead IV-F, including inversion of T wave, RS-T interval changes, absent positive deflection, and Q-wave greater than 2 mm, (4) notching and widening of the QRS complex, (5) Q_s more than 25 per cent of the largest excursion of QRS, except in the case of right axis deviation

It is now definitely established that the coronary arteries are not end arteries. In reviewing the physiologic anatomy of the coronary arteries, the right coronary supplies the entire right ventricle, except the left third of the anterior wall. A branch supplies the right half of the posterior

accelerated rates often results in precordial pain

In patients with toxic thyroid, paroxysmal cardiac pain may be due to the tachycardia and diminished stroke volume or diminished relative blood supply of the heart associated with increased metabolism

Paroxysmal malignant cardiac pain implies the presence of definite pathologic changes in the coronary arteries. It is well to mention first those lesions less frequently seen. Rheumatic involvement of the coronaries is rare but does occur. First, it is due to endarteritis with swelling of the endothelium of the smaller branches of the coronaries, and second, to the presence of Aschoff bodies in the perivascular space or adventitia with resultant compression of the lumen of the coronary arteries. Aschoff states that this produces anemic necrosis, which plays a large part in the myocardial weakness in rheumatic fever. Syphilis, strange to relate, plays a minor role in the etiology of coronary sclerosis. It affects the coronary orifices only by direct extension from the aorta. The process never extends into the coronaries any appreciable distance. Polycythemia vera, through inspissation of blood, might favor coronary thrombosis. A few such cases have been reported by Boyd and Riesman. Periarteritis nodosa and thromboangitis obliterans occasionally involve the coronary arteries. Embolic phenomena in the coronary arteries are rare. They may be found occasionally in cases of acute and subacute bacterial endocarditis and rheumatic mitral heart disease. The most common disorder of the coronary arteries is arteriosclerosis.

Coronary sclerosis is four times more prevalent in men than in women. It usually occurs in individuals past fifty, but age is apparently not a barrier. Only recently, White and others have reported a series of 100 cases in individuals under forty. About 17 per cent fall in this group. Stroud has reported a case in a man 28 years old. Coronary sclerosis is rare in women unless there is associated hypertension or glycosuria. We are all

familiar with the fact that it occurs in individuals whose occupations demand much mental stress and strain. As physicians, we are well acquainted with overwork, worry, and fatigue, with inadequate leisure and inadequate, tiring vacations. In a series of 308 cases of coronary sclerosis, recently reported in the *Journal of the American Medical Association*, it was found to be most frequent in physicians, bankers, lawyers, clergymen, and least prevalent among farmers and laborers. Regarding habits—overeating, overindulgence in sexual relations, and overambitiousness seem to be factors. The alcoholic habit itself does not seem to predispose to coronary sclerosis unless it is accompanied by other abuses. Let me emphasize here that the extensive use of tobacco is a very definite factor. Over 50 per cent of my cases of coronary sclerosis are heavy smokers.

Clinically, we see four types of coronary sclerosis: (1) the typical pain group, (2) the gastrointestinal group, (3) the respiratory group, (4) the atypical symptom group.

The main characteristic of the pain associated with coronary sclerosis is its direct relationship to effort or emotional strain. The patient states very simply that walking or lifting or excitement produces some kind of sensation in the chest, or at times in the arm, that compels an arrest of activity. After a few moments of quietness, the distress is gone and the patient feels as well as ever. The pain is usually behind the middle or lower sternum. It may radiate down the left or right arm, both arms, into the back, or up into the jaws. It is usually described as a viselike sensation.

Very frequently, coronary sclerosis manifests itself, clinically, by gastrointestinal disturbances simulating, at times, gallbladder disease or duodenal ulcer. Patient complains of no substernal pressure but perhaps of a vague, nauseating distress in the upper abdomen with a desire to belch gas. The picture may also resemble splenic infarct or renal colic.

The respiratory symptom complex of coronary sclerosis you are all familiar

sult to the heart, the heart itself is heard to beat, upon osculation, as calmly as though it were not in the least involved

Blake believes that the occurrence of a temporary hyperglycemia and glycosuria following a coronary thrombosis is a physiologic response of the body. A relatively high blood sugar is of definite advantage to the cardiac patient. To administer insulin in these cases is not only unnecessary, but death may result.

All too often, I have noticed, as a sequel, a perplexing rheumatoid arthritis involving, most frequently, the hands and shoulders. Similarly, Boas and Levy have reported an affection of the shoulder characterized by pain, muscle spasm, and limitation of motion, occurring commonly in patients with coronary sclerosis.

The embolic phenomena are sudden and spectacular. Given an acute coronary closure with resulting infarction of the myocardium, should the process extend to the endocardium, this latter becomes roughened and mural thrombi result. Those from the right ventricle may break off and produce pulmonary emboli, and those from the left ventricle may break off into the greater circulation with resulting cerebral emboli, embolic processes to the kidneys, spleen, and very frequently to the vessels of the lower extremities.

The prognosis in acute coronary thrombosis must be guarded. A patient may seem to have had a mild attack and to be doing favorably, then suddenly he dies on the tenth to twelfth day. Also, a severe case, with complications, may recover. Eight to 12 per cent of individuals die of the first attack. The percentage of mortality is greater in subsequent attacks. The average subsequent duration of life is two and one-half years. The immediate prognosis is somewhat dependent upon the suddenness of the occlusion, the caliber of the occluded vessel, and the fundamental state of the myocardium.

Often the diagnosis of coronary thrombosis is not easy. There have been reported a number of cases which on post-mortem examination showed several isolated areas of fibrosis with old infarctions

but no clinical history suggestive of earlier coronary occlusion. The electrocardiogram is of aid in many cases. Changes in the electrocardiogram may occur in the early hours of the attack. Rapid alterations in complexes occur in days or weeks. Following the attack, repeated tracings are necessary, for at one time during the alterations the electrocardiogram may seem normal.

Precise diagnosis is a prerequisite to the application of therapy. The nature of the disturbance must be determined before treatment can be instituted. One must recognize that a coronary thrombosis has occurred before adequate treatment can be initiated. The attack of coronary thrombosis must be differentiated from paroxysmal cardiac pain due to either coronary insufficiency or spasm. In this latter, with cessation of activity or the use of nitroglycerine, in a few minutes the subjective symptoms disappear, and, as a matter of fact, the structure of the myocardium is unimpaired. We know this is not true of coronary occlusion.

In the treatment of coronary thrombosis there are a few procedures that come under the "must" list. Of these, morphine heads the list. This must be administered in doses large enough to put the patient to sleep. It may be necessary to administer as much as one and one-half grams. Next, oxygen, if respirations are labored, is essential. The principle of absolute rest must be strictly adhered to, there must be no conversation, no visitors, no unnecessarily solicitous nursing care, no enemas or cathartics for at least four or five days, if need be. Of late, the use of coramine has been advised, as it has been definitely shown to increase the coronary flow. For the shock, in addition to morphine, I like to use caffeine sodium benzoate at stated intervals. Small doses of quinidine may be used in the attempt to forestall the occurrence of ventricular fibrillation, but this is absolutely contraindicated if there is evidence of bundle branch block or A-V block.

There are a few preparations that must not be used in the treatment of coronary thrombosis. Digitalis diminishes the

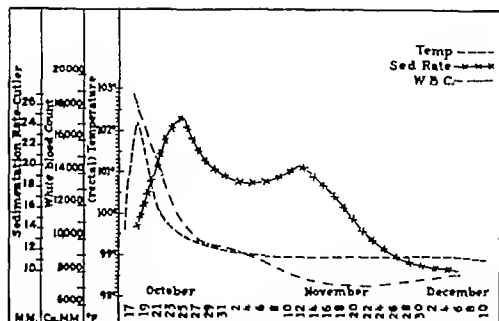


FIG 1 Chart of male, aged 72, who suffered acute myocardial infarct due to coronary thrombosis, on October 17, 1938. This shows the relative value of temperature, leukocyte count, and sedimentation rate in determining the activity of the myomalacia

wall of the left ventricle and a small strip of the interventricular septum. The left coronary supplies the whole remaining part of the left ventricle, the left anterior portion of the right ventricle, and a small anterior strip of the interventricular septum. The anterior descending branch of the left coronary supplies the apex of the left ventricle and a portion of the interventricular septum.

Four sources of compensatory collateral circulation are possible when a main vessel is gradually occluded. (1) development of more extensive intercoronary communication, (2) development of extracardiac anastomosis so beautifully demonstrated by Beck, (3) enlargement of arterioventricular channels demonstrated by Gross, (4) a reversal of flow from cardiac veins to blood capillaries and the thebesian veins. Gross has shown more extensive anastomosis with advancing age. Wiggers believes this development of a newer circulation is a matter of dynamics. "The slow development of differential pressure gradients during the establishment of partial or complete occlusion of a main branch may distend ordinarily useless vessels to a degree that they soon become pervious to blood."

Given a patient with coronary sclerosis, the one catastrophe feared is the development of a thrombosis. In the production of coronary thrombosis, Luten states that the chief factor is the diminution of coronary flow either by (1) lower-

ing diastolic pressure, (2) lessening cardiac output, or (3) coronary constriction by vagus stimulation. Phipps, of Boston, has found that physical exercise is a participating factor in the production of thrombosis in only 40 per cent of cases and that a greater number of cases occur during rest. This is due to the lowered diastolic pressure and stroke volume or output of the heart while at rest. Yet, we must admit that unusual physical effort, emotional excitement, marked fatigue, or any trying experience may be followed by coronary thrombosis. In these latter, perhaps, the exciting factor may be the coronary constriction by reflex vagus stimulation. Sometimes the immediate exciting cause is not evident.

The symptoms of acute sudden closure in the coronary artery are usually very dramatic and so familiar that it seems unnecessary to recount them here. Within twenty-four hours of onset, there is usually a slight fever—100 to 101°F. Leukocytosis, running from 12,000 to 20,000, may appear within two or three hours after the onset of the attack. The sedimentation time is definitely shortened. This change appears later in the disease than the fever and leukocytosis but persists for some time after these return to normal and is therefore a better guide as to the progress of healing of acute myomalacia than temperature or leukocytosis. The fever, leukocytosis, and diminished sedimentation time are due to the inflammatory reaction about the infarct area, absorption of protein products, and decomposition.

Pericardial rub occurs in from 10 to 20 per cent of the cases, usually from the second to the fourth day and rarely after ten days. It is most often heard over the lower portion of the left ventricle in the area to the left of the sternum and lower end of the sternum, rarely over the base. It is transitory and localized—not heard over an area greater than 4 to 5 cm in diameter. It has no bearing on the prognosis. Suppression of urine is a very common symptom. It is remarkable to note that through all these dramatic symptoms, due to such a grave in-

sult to the heart, the heart itself is heard to beat, upon auscultation, as calmly as though it were not in the least involved.

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Often the diagnosis of coronary thrombosis is not easy. There have been reported a number of cases which on post-mortem examination showed several isolated areas of fibrosis with old infarctions

but no clinical history suggestive of earlier coronary occlusion. The electrocardiogram is of aid in many cases. Changes in the electrocardiogram may occur in the early hours of the attack. Rapid alterations in complexes occur in days or weeks. Following the attack, repeated tracings are necessary, for at one time during the alterations the electrocardiogram may seem normal.

Precise diagnosis is a prerequisite to the application of therapy. The nature of the disturbance must be determined before treatment can be instituted. One must recognize that a coronary thrombosis has occurred before adequate treatment can be initiated. The attack of coronary thrombosis must be differentiated from paroxysmal cardiac pain due to either coronary insufficiency or spasm. In this latter, with cessation of activity or the use of nitroglycerine, in a few minutes the subjective symptoms disappear, and, as a matter of fact, the structure of the myocardium is unimpaired. We know this is not true of coronary occlusion.

In the treatment of coronary thrombosis there are a few procedures that come under the "must" list. Of these, morphine heads the list. This must be administered in doses large enough to put the patient to sleep. It may be necessary to administer as much as one and one-half grains. Next, oxygen, if respirations are labored, is essential. The principle of absolute rest must be strictly adhered to, there must be no conversation, no visitors, no unnecessarily solicitous nursing care, no enemas or cathartics for at least four or five days, if need be. Of late, the use of coramine has been advised, as it has been definitely shown to increase the coronary flow. For the shock, in addition to morphine, I like to use caffeine sodium benzoate at stated intervals. Small doses of quinidine may be used in the attempt to forestall the occurrence of ventricular fibrillation, but this is absolutely contraindicated if there is evidence of bundle branch block or A-V block.

There are a few preparations that must not be used in the treatment of coronary thrombosis. Digitalis diminishes the

coronary flow and increases the work of the heart, so should be avoided. Adrenalin also diminishes the coronary flow so should never be used routinely in the shock of coronary thrombosis unless as a very heroic gesture when there is cardiac standstill or heart block. For the first few days, there does not seem to be any advantage in using theobromine or theophylline derivatives.

With regard to diet, for the first few weeks the patient does best on an 800-calorie diet. This undernutrition eliminates gastroduodenal reflexes, minimizes rise in metabolic and cardiac output which usually follows a meal, and gradually lowers the basal metabolism rate. This effects a decrease of pulse rate and blood pressure and so diminishes the work of the heart. For the same reason, I generally insist that the patient remain in bed for six weeks, unless complications arise.

The use of sodium thiosulfate, 10 per cent intravenously, in the prevention of postoperative emboli has been advocated by Bancroft and his associates. Some cardiologists are now employing this preparation in coronary thrombosis hoping to forestall any embolic catastrophe.

The following procedures may be of value in the treatment of coronary sclerosis with relative myocardial insufficiency.

- 1 Patient's activities should be limited, but if possible, avoid being made an invalid. He should be instructed to lead a calm, quiet, and orderly existence, avoiding strain and excitement. He must be taught to acquire an air of philosophic calm. If possible, he should winter in the south and spend weekends away from home, such as in a quiet country hotel.
- 2 Patient should avoid overeating and fast eating. Diet should be preferably simple and easily digestible. If overweight, the patient should reduce. He should be told to lie down in bed, with shoes, coat,

vest, collar, and tie off, one hour after lunch daily.

- 3 Tobacco in any form should be avoided.
- 4 High altitudes should be avoided.
- 5 Mild sedatives, as small doses of phenobarbital or bromides, are of advantage in maintaining mental calm.
- 6 Theobromine and theophylline derivatives have been proved to increase the coronary flow and often give relief. Likewise, coramine is at times beneficial. A group at Mt. Sinai Hospital in New York City have reported good results using hypertonic saline intravenously. Tissue extracts are absolutely useless.
- 7 It is my belief that surgery has little or no place in the therapy of this condition. Sympathectomy of the cervicothoracic system and the perivertebral block acts by interrupting sensory stimuli. This does away with pain but does not alter the underlying pathology. And so these procedures may be harmful because, thereby, a warning signal, useful to the individual, is abolished. Blumgart, of Harvard, has advised total ablation of the thyroid. I do not believe that there have been enough confirmative studies to warrant the employment of this procedure. Of late, the brilliant work of Beck and O'Shaughnessy is worthy of consideration. Beck, of Cleveland, now makes his approach from the left side of the sternum, and a graft from the pectoralis major is used. Powdered beef bone is placed on the heart surface to produce a low grade inflammatory reaction between the grafts and the heart. In his first 12 operations, the mortality was 50 per cent. In the last 9 patients, the mortality was zero. O'Shaughnessy, of the Lambeth Cardiovascular Clinic in London, feels that the factors producing

postoperative shock and thrombosis can be better controlled by cardio-omentopexy than by the alternative operation of Beck

- 8 Pain and anxiety are the most striking symptoms of physical distress. Both are subjective and may be relieved by any form of treatment in which the patient has implicit confidence. This faith is a mental reaction. The failure to recognize the influences of the mind upon the subjective symptoms will inevitably lead to therapeutic failure. We must practice our medicine as an art as well as a science. The art is based on confidence and the interplay of personalities be-

tween the doctor and his patient. It is by this art that the doctor molds the activity, the faith of the patient, so that he can apply with full cooperation the indicated scientific therapeutic measures. There can be no fixed rule as to just what to say to the patient. No matter what the actual pathology of the coronaries, the nervous element is always present and has a marked influence on the patient's future welfare. He must be told enough so that he can avoid attacks and, on the other hand, not unduly alarmed but rather given faith, confidence, and encouragement.

117 Albany Avenue

GIMME!

Backward, turn backward, oh Time, in
your flight,

Make me a boy again, just for tonight!
Make me a kid without worry or care,
Barefooted, dirty, with tousled red hair!
Give me the cast-iron stomach I had
When I was naught but a freckle-faced
lad!

Backward, turn backward, oh Time, in
your flight
And give me my raging boyhood appet-
ite!

Feed me on dainties my mother would
make—

Give me the flaky old-time buckwheat
cakel

Smothered in syrup, with butter, spread
o'er—

Bake me a dozen and hurry up more!

Make me a batch of the doughnuts I
knew

Sprinkled with sugar so bountifully too
Caraway cookies and hot ginger-bread,
Thickly with mother's best marmalade
spread!

Give my digestive machinery swing,
Fit to assimilate any old thing!
Fill up my tummy with cocoanut cake,
Boldly defying each dyspeptic ache!
Stuff me with pudding and blackberry
jam,

On currant jelly again let me cram,
Bring me a section of mother's mince
pie,
And then I'll be ready to curl up and
die!

E A Brininstool

—Sent to *K S D, Calif.*, by a patient with
duodenal ulcer, and printed in the *J. A. M. A.*

TO STUDY THE NEW IN NUTRITION

Over four hundred teachers and field representatives of state and national organizations working with families in New York State homes are planning to gather at the New York State College of Home Economics at Cornell University, Ithaca, July 15, 16, 17, for a conference with outstanding nutrition and education specialists. The field representatives include doctors, nurses, social workers, Red Cross, Y W C A., Anti-Tuberculosis, and extension agents, dieticians, visiting housekeepers, and others.

The immediate purpose of the conference is the further education of field personnel who are increasingly aware of the need for a fuller nutritional background. Its larger goal is the coordination of community effort for the better nutrition, and thus better health, of New York State families.

This nutrition conference is the second such conference to be held and, like the former one, is sponsored jointly by the New York State departments of Health, Education, and Social Welfare in Albany and the New York State College of Home Economics at Ithaca. Last year's conference was attended by about two hundred persons and lasted a week; this year's three-day conference is expected to attract about four hundred people.

In addition to technical information concerning minerals and vitamins and the interplay of different foods in the body, the value of various methods of getting nutrition information across will be discussed: radio, news writing, home visits, demonstrations, and movies. Also the relationship between good nutrition and home management and family relationships will be considered.

HEMATURIA IN OFFICE PRACTICE

Critical Study Based on a Series of 2,446 Cases

A RAVICH, M D , F A C S , Brooklyn, New York

JUST as the color red means danger in the traffic world, so should hematuria spell danger in medicine. Given such a signal, you must realize that immediate investigation becomes imperative. Although the cause may be relatively unimportant in some instances, all too often it bespeaks pathology of more or less gravity. Early recognition of the source or etiology of the bleeding often presents the only opportunity for relief or cure. Even though frank hematuria is usually the motivating factor which alarms and brings the patient to the doctor, the discovery of microscopic hematuria is often fully as important.

This report is based on a study of the histories of the author's office patients from the years 1916-1935 omitting 1918-1919, the period of the World War. Hematuria was found in 2,446 patients in whom a definite diagnosis was made. About 751 additional patients with hematuria were seen and excluded from this study because, for various reasons, a complete investigation could not be carried out. The material was divided into three groups: (1) microscopic, (2) gross and microscopic, (3) gross minus microscopic. Included in the microscopic group were voided specimens of urine, obtained from males, showing a few or more erythrocytes microscopically and catheterized specimens, from women, that showed at least a moderate number of red blood cells. Specimens from males showing rare erythrocytes were excluded from this series. This applied also to a large group of females, even though the few erythrocytes present could not entirely be attributed to trauma from catheterization. This accounts for the exclusion of a fairly large number of calculi and other important groups from this study. The second group is self explanatory and included the cases where a history of gross

hematuria was obtained and red blood cells were found during the routine examination of the urine. The third group embraced those cases in which a history of gross hematuria was obtained but no evidence of blood in the urine was found upon analysis at the time of examination.

A careful perusal of the material leaves the impression that the significance of hematuria is now better appreciated and understood by the profession, but there is still room for much enlightenment. The efforts of the profession must be intensified to spread the gospel of the true significance of hematuria. Persistent frank hematuria alarms the patient and the physician alike, and in most instances of this type, within a few days, a complete urologic study is done, with the result that a diagnosis of incipient lesions is made more frequently. Such promptness, however, is not the general rule with intermittent hematuria. It appears that the first few episodes of bleeding are often completely overlooked and minimized. The oral medication that is prescribed is usually given credit for the cessation of the bleeding. Upon the recurrence of the hematuria the patient either has the original prescription refilled without consulting his physician or the latter, after consultation, again resorts to oral medication. Numerous histories could be supplied of intermittent bleeding ranging for as many as twenty years. Some of the cases of renal lithiasis had intermittent bleeding for a dozen or more years. Upon examination, the physician often found hopeless and almost complete destruction of the kidney parenchyma. In the cases of malignancy anywhere in the urinary tract, some of the tumors were allowed to progress to a point where surgical intervention was well nigh impossible. Only when sharp pain accompanies intermittent hematuria does the patient demand the

benefit of a prompt urologic investigation.

The accompanying Table 1 gives the lesions encountered in this study as well as the relative frequency of the type of hematuria. It is suffice to say that no case of hematuria should fail to receive a complete urologic survey. In obscure conditions, repeated studies at various intervals may be necessary before a definite diagnosis can be made. As urology advances, the number of cases undiagnosed becomes fewer and fewer. Thus, whereas so-called essential or idiopathic hematuria was a fairly frequent entity fifteen to twenty years ago, it is now never accepted until after the most painstaking and repeated examinations fail to find any concrete pathology. Even then, such a diagnosis is regarded with considerable suspicion.

The finding of hematuria in the presence of calculi anywhere along the urinary tract needs little comment, even though it occurred in 1,342 cases. The importance of microscopic hematuria in the presence of right ureteral calculi assumes a major role in the differential diagnosis of lesions of the right lower quadrant of the abdomen. This is especially true when the question of appendicitis confuses the issue. In quite a number of cases the finding of erythrocytes in the urine prevented an appendectomy and led to a diagnosis of urinary stone upon further routine urologic investigation. In 1 case however, a nonopaque uric acid ureteral calculus and acute appendicitis were concomitantly present. In another instance the appendix lay retrocolically and by extension had produced a periureteritis which was apparently responsible for the hematuria. There were several other cases in which all symptoms pointed to a diagnosis of ureteral calculus, but negative findings obtained after a most exhaustive and careful urologic examination led to a correct substantiated diagnosis of retrocecal appendicitis. Occasionally acute salpingitis is productive of hematuria, but since this lesion does not demand urgent operative interference, a correct diagnosis is usually made in time.

A moderately high incidence of gross hematuria was found in renal tuberculosis. This fact was quite impressive since Rathbun, in his excellent report on hematuria, stated that no cases of blood in the urine were observed in his series of renal tuberculosis.

There were 120 patients with unilateral and 4 with bilateral ureteral obstruction in this series. Repeated examinations confirmed the original diagnosis, and, furthermore, these patients were actually relieved following periodic ureteral dilatations. In 8 instances of definite ureteral strictures, calculi developed in the upper urinary tract after a lapse of years. It seemed certain that the calculi were not present at the first examination as evidenced by normal roentgenography and pyelography and by the absence of a scratch on the wax-tipped bougie. Although direct proof is lacking, it appears that ureteral obstruction with urosthesis must have been an important factor in the formation of these calculi.

Aside from the important position occupied in this study by prostatic hypertrophy, malignant and benign tumors of the urinary tract were found in 240 cases. All of the cases of malignancy of the bladder showed unquestionable gross hematuria. Only about two-thirds of the cases of papilloma of the bladder presented hematuria. There were several cases in which concomitant rectal bleeding with hematuria, as well as vaginal bleeding with hematuria, had caused considerable confusion in the minds of the patients and physicians as to the true source of the bleeding. The latter, resorting to routine urologic examination, quickly found the source of the hematuria in addition to the other bleeding. A highly instructive case was that of a young woman, 29 years of age, who had had intermittent terminal but painless hematuria for five years, during which time she had been treated with oral medication. During this interval she was seen by a capable gynecologist who, probably on account of her age and the observation of a large cervical polyp, concluded that this lesion must have been

TABLE 1—TYPE OF LESION AND CHARACTER OF HEMATURIA

	Microscopic	Gross Plus Microscopic	Gross Minus Microscopic	Total
Urothiasis	833	443	58	1,334
(a) Renal calculus				
(1) Unilateral	264	128	12	342
(2) Unilateral with unilateral ureteral	52	12	4	74
(3) Bilateral	28	10		38
(4) Bilateral with unilateral ureteral	2	8		11
(5) Bilateral with bilateral ureteral		4		4
(6) Renal with renal tuberculous	2			2
(7) Renal with solitary cyst of kidney	2			3
(8) Renal with tuberculous cyst of kidney	1			1
(9) Renal with polycystic disease of kidneys	2			2
(10) Renal and ureteral with large obstructing prostate	10	8	2	20
(11) Renal ureteral and bladder	2	5		7
(b) Ureteral calculus				
(1) Unilateral	454	163	24	641
(2) Bilateral	12	6	5	23
(3) Ureteral and bladder		11		11
(c) Bladder calculus				
(1) Bladder	8	2		10
(2) Bladder with large obstructing prostate	45	68	8	121
(3) Bladder with papilloma of bladder	2		1	8
(4) Bladder with carcinoma of bladder	2	8	2	12
(5) Bladder with carcinoma of prostate	2	2		4
(6) Bladder with urethral stricture		2		2
(7) Urethral		6		6
Tumors	145	243	32	420
(a) Kidney				
(1) Neoplasms of cortex	8	29		37
(2) Neoplasms, intrapelvic		3		3
(3) Neoplasm intrapelvic with renal calculi	1	1		2
(4) Neoplasm intrapelvic involving ureter and bladder		3		3
(5) Polycystic disease	2	2		4
(6) Solitary cyst	5			5
(7) Tuberculous cyst	1			1
(b) Ureter				
(1) Carcinoma	1			1
(2) Neurofibroma	1			1
(c) Bladder				
(1) Carcinoma	6	62	11	79
(2) Carcinoma with large prostate	3	7		10
(3) Papilloma	1	52	6	59
(4) Papilloma with large prostate		5		5
(d) Prostate				
(1) Nontumorous enlargement	88	66	12	166
(2) Carcinoma	18	10	2	30
(3) Fibrosis of vesical neck with contracture	10	3	1	14
Inflammation and Infection	322	207	30	559
(a) Kidney				
(1) Perinephritic abscess	2			2
(2) Pyelonephritis	33	23	6	62
(3) Pyelonephritis of pregnancy	5	2		7
(4) Renal tuberculosis	15	16	3	34
(5) Renal tuberculosis with tuberculous epididymitis		1		1
(6) Hydronephrosis—unilateral	9	4	1	14
(7) Hydronephrosis—unilateral with ureteral stricture	12	5	1	18
(8) Hydronephrosis—bilateral	3	3	1	7
(9) Hydronephrosis—bilateral with large prostate		1	1	2
(10) Hydronephrosis—bilateral with fibroid uterus	6			6
(b) Ureter				
(1) Ureteral obstruction—unilateral	81	36	3	120
(2) Ureteral obstruction—bilateral	4			4
(3) Ureterocele	4			4
(c) Bladder				
(1) Cystitis	33	42	4	79
(2) Cystitis with urethral stricture	1	7		8
(3) Cystitis emphysematosa		1		1
(4) Hunter's ulcer	2			2
(5) Varices in bladder		2		2
(6) Foreign body in bladder		2		2
(7) Unilocular cysts at vesical neck with granular urethritis	13	28	3	44
(8) Unilocular cysts at vesical neck with granular urethritis and stricture of urethra	3	2		5
(d) Prostate and urethra				
(1) Prostatitis and seminal vesiculitis	45	5		50
(2) Prostatitis hypertrophied verumontanum	10	8	5	23
(3) Enuresis with hypertrophied verumontanum	2			2
(4) Prostatic abscess	2			2
(5) Valves in posterior urethra		2		2
(6) Vaginitis in posterior urethra		1		1
(7) Abscess of Cowper's gland	1			1
(8) Stricture of urethra	16	4	2	22
(9) Stricture of urethra—traumatic		2		2
(10) Stricture of urethra—postirradiation	1			1
(11) Urethral caruncle	8	4		12
(12) Urethral meatitis	10	6		16
(13) Intraurethral chancre	1			1

TABLE 1 (Continued) —TYPE OF LESION AND CHARACTER OF HEMATURIA

	Microscopic	Gross Plus Microscopic	Gross Minus Microscopic	Total
Constitutional Diseases	64	39	1	104
(1) Nephritis	34	14		48
(2) Thrombopenic purpura hemorrhagica	3			3
(3) Purpura hemorrhagica of bladder	10	8		18
(4) Secondary syphilis	1			1
(5) Polycythemia vera		1		1
(6) Endocarditis with infarct of left kidney	1			1
(7) Following acute infection of upper respiratory tract	12	14	1	27
(8) Following acute infection of upper respiratory tract, otitis media, and mastoiditis	3	2		5
Miscellaneous				21
Trauma				
(a) Kidney		6		6
(b) Bladder		4		4
(c) Urethra		4		4
Chemical				
(a) Following ingestion of urotropin	2			2
(b) Following bichloride of mercury	2			2
(c) Following injections into urethra		3		3

the source of her bleeding. Since the visible hematuria ceased whenever she called upon him, he assumed that her repeated personal observations were incorrect. When the terminal hematuria persisted however, even after the removal of the cervical polyp, she was catheterized for the first time, and blood was found in her urine. She was then referred for cystoscopic examination which revealed a large papillary carcinoma of low-grade malignancy on the roof of the bladder. Fortunately it was completely eradicated by fulguration.

To emphasize further the necessity for the most careful kind of urologic examination, I present the following case which should teach a powerful lesson. A bachelor, 37 years of age, developed bloody urethral discharge, after coitus, five years prior to his first examination. The discharge responded promptly to local and internal medication. Following coitus, four months before his visit to me, he again developed a bloody discharge which responded rapidly in the same manner as before. On account of an accidental urinalysis that revealed albumin and blood and pus in his urine, he was placed upon a nephritic regimen for three months. Two weeks before his admission the patient developed sudden profuse painless hematuria which lasted for four days. Following this episode, cystoscopic examination was resorted to and revealed multiple infiltrating carcinomatous neoplasms on the trigon and around the bladder neck. In spite of suprapubic cystot-

omy with insertion of radium emanation seeds, he developed a spontaneous fracture of the neck of the femur and died within five weeks of generalized carcinomatosis. Had this case been studied properly five years before, such an ending could have, in all likelihood, been avoided.

Total hematuria was present in 36 cases of proved renal neoplasm, and microscopic blood, only, was observed in 9 cases. The latter group was usually constitutionally inferior to patients with gross hematuria and, as a result, frequently required preoperative transfusion of blood. Reiteration seems advisable at the expense of repetition that the tumor cases with intermittent hematuria fared badly, they were often converted from relatively good to extremely poor risks.

Even though gonorrheal infection of the urethra was not included in this study, inflammation and other infections of the urinary tract occurred in 559 of the cases—second in importance to that of urolithiasis in this series. In view of the fact that so many cases under this heading start out as an acute condition, many of these cases seek relief early. However, many others have an insidious mild onset and course, and it is in this group where a thorough routine physical check-up helps so much in its discovery and cure before the condition becomes more or less hopeless.

Hematuria was found quite commonly in granular urethritis, with single or multiple unilocular cysts at the vesical neck associated with congestion and in-

flammation of the trigon. Great care and vigilance must be exercised in these cases to avoid overlooking more serious lesions elsewhere in the urinary tract. Verumontanitis, with enlargement associated with posterior urethritis, requires similar vigilance. Hematuria caused by the rupture of blood vessels on the surface of the enlarged prostate must be differentiated from bloody emissions and admixed hematuria caused by prostatic calculi, prostatic carcinoma, prostatitis, prostatic abscesses, etc.

Hematuria was encountered in 16 cases of dermatitis about the urethral meatus in young males between the ages of 1 and 5 years. The excoriation and dermatitis were frequently attributable to the narrowness of the meatus and, in some, required meatotomy. The etiology of the remaining cases remained obscure except that it almost always occurred in cold weather when the damp diapers or underclothing of these youngsters would cause a dermatitis of the meatus with crust formation. The removal of this crust if firmly adherent brought on the mixture of blood and urine.

That certain constitutional diseases produce hematuria is definitely proved, but in each instance local disease of the genitourinary tract should first be carefully and definitely excluded. Hematuria in thrombopemic purpura hemorrhagica was observed 3 times. In addition, 18 cases of so-called purpura of the bladder were seen. The vesical mucosa appeared intact, but submucosal hemorrhage in the form of small or large petechiae were observed. The mucosa between the hemorrhagic patches appeared normal. In all likelihood the vesical lesion was an expression of a generalized disease. In several instances a prophecy of arthritic involvement materialized several weeks later.

Thirty-two patients with hematuria were encountered who gave a history of an infection of the upper respiratory tract within twenty-four hours to two weeks before the onset of hematuria. Five of these patients also had otitis media and subsequent mastoiditis. In some cases

the microscopic hematuria persisted for a long time, but the blood in the urine disappeared from all cases without direct treatment of the urinary tract. We have no available pathologic material of this fascinating problem. Clinically, however, it seems that focal infection is productive of hematuria in a small number of cases.

An interesting exogenous source of hematuria is the ingestion of chemicals. There were 2 cases of bichloride of mercury poisoning and 2 cases of microscopic hematuria following the ingestion of hexamethylenamine. It is well known that large doses of the latter drug may have an irritating effect upon the kidneys. Owing to the very extensive use of this drug without harm, undue susceptibility to it must exist in order to produce hematuria.

Comment

A careful perusal of my office records shows that in 50 per cent of all the cases of hematuria stone in the urinary tract was at fault. It is interesting to note that in one-half of the patients who came in with frank hematuria stone was also the etiologic factor. With regard to tumors of the urinary tract, this condition occurring in only 10 per cent of all the cases of hematuria, just twice as many, i.e., in 20 per cent of all the frank hematurias, tumor was at fault.

Whereas a certain percentage of urologic conditions associated with infection or inflammation is more or less self limited in its course, there is a very appreciable number that may lead to serious injury of the affected organ if it remain undetected and untreated. In many, the patient's very existence is at stake. Correct diagnosis and appropriate treatment, therefore, are of great importance.

The records also show that nephritis, which is the diagnosis made by the family physician in so many cases of hematuria, actually comprises less than 2 per cent of all the patients with macroscopic and microscopic hematuria and a little over 0.5 per cent of those with gross hematuria. Even though many more cases of nephritic hematuria that never reach the urologist must be admitted, one should not jump

to such a conclusion without a most careful investigation. It is deplorable that diagnoses are often made without any more check-up than that offered by a routine urinalysis done by a commercial laboratory, very often on a stale specimen of urine.

The old adage, "strike while the iron is hot," if followed, can save many a life. Procrastination often spells defeat. The best time for investigation is usually

during the period of active bleeding, when the patient is in a receptive mood and when the urologist can actually see the source of the bleeding without guesswork and without repeated painstaking examinations. By intelligent cooperation, the medical profession can exert a tremendous influence for the reduction of death from cancer, stones, and other serious ailments of the urinary tract.

101 Lafayette Avenue

NATIONAL MEDICAL DEFENSE

With the exception of the Communazis, Americans are united on the need for better national defense. In the emphasis on military preparedness, however, there is danger that the country may forget that medical preparedness is as essential as arms, remarks the *New York Medical Week*. Modern totalitarian war makes enormous demands on the medical profession which the latter must prepare itself to meet.

The Medical Society of the State of New York has shown itself alive to the role of medicine in the national defense. At the recent Annual Meeting military medical needs were the subject of extensive discussion.

Fortunately, our system of medical care, with its flexibility and encouragement of professional initiative, adapts itself easily to war-time requirements. Adoption of compulsory health insurance would be a blow to the national defense as well as to high peace-time standards of medical care.

In England, for example, there is a serious shortage of experienced plastic surgeons. This is due to the fact that a few men have enjoyed a virtual monopoly in that field. Under compulsory health insurance the young practitioner without extensive means immediately enrolls in a

panel. There, unless he is an outstanding exception, routine clerical and clinical duties soon overwhelm him and make graduate study almost impossible. The specialties are accordingly reserved for a wealthy few who are not constrained by necessity to do panel work.

The American system, on the other hand, encourages graduate study and professional initiative. Without the compulsory insurance panels to sustain him in mediocrity, the young practitioner must develop himself, by institutional work and continuous study, in order to earn a living and get ahead. He need not waste his time on clerical red tape nor cripple his professional judgment with the stultifying shackles of bureaucratic regulation. Special as well as general practice are open to all who desire to compete.

To the physician who is dedicated to the preservation of life war is an unspeakable blasphemy. In war or peace, however, he must be prepared to do his utmost to alleviate human suffering and restore the sick and wounded to health. If he is to discharge this duty properly, he must be permitted to work under conditions that experience has proved to be conducive to the full development of medical skill.

AIR SICKNESS CAN BE AVOIDED

Air sickness, which affects about one in every two hundred air passengers, can be almost entirely avoided by proper precautions on the part of both air lines and passengers. Sibyl Winsor Johnston, Chicago, declares in *Hygeia, The Health Magazine* for June.

Persons who are extremely susceptible to motion should take medicine, prescribed by a physician, before going aboard or before the symptoms have progressed. A quick acting sedative that does not have a prolonged effect is the most desirable.

"The factors which cause air sickness are rough air, extreme nervous tension, intemperate habits of eating or drinking, faulty cabin ventilation, heat, and excessive altitude without accessory ventilation," Mrs. Johnston says. "All these are avoidable except rough air, and the effects of this are minimized when the pilot flies in the higher altitudes above the weather

Slower speed will also reduce the severity of the bumps. Pilots of all the major air lines have instructions to reduce the speed of their ships when in rough weather, unless in their own best judgment the conditions warrant higher cruising speed.

"The heat and ventilation of the passenger cabin is easily controlled. Insufficient fresh air and excessive heat will sometimes precipitate an attack of air sickness when it could otherwise have been avoided.

"Don't eat rich or heavy foods or anything that might cause gas to form on your stomach either before going up or while in flight. In case of stomach distress, an effervescent alkaline drink is helpful and is obtainable from the stewardess. Chewing gum will contribute to the general comfort and 'ventilate' the ears, for the changes in atmospheric pressure may cause the eardrum to react unpleasantly."

ALLERGIC SINUSITIS

M COLEMAN HARRIS, M D , F A C P , New York City

(Adjunct Professor in Medicine (Allergy), New York Polyclinic Medical School and Hospital)

TO INSIST that a knowledge of allergy is extremely important to the ear, nose, and throat specialist is merely to emphasize a widely acknowledged fact. From the initial conception of allergy to the present time, interest of the otolaryngologist in this field has been steadily maintained.

While, in the past, early physiologic studies of the nose were concerned primarily with olfaction, today emphasis is being placed mainly on its accessory respiratory function. Thus, both the ability of the nasal mucous membrane in supplying moisture to inspired air and the efficiency of the vestibular vibrissae in filtering out coarse particles are being seriously studied. Furthermore, the role of the turbinates in breaking up a column of air, thereby producing eddies and facilitating contact of the air with some part of the nasal mucous membrane, is being more carefully considered. The warming function of the nose, the direction and rate of ciliary action, the vasomotor mechanism, as well as bacteriologic research of the nasal and paranasal secretions, are likewise being subjected to continual investigation.

For example, Hansel,¹ who has done so much of this work, as well as Grove and Cooke,² Kern and Schenck,³ Kistner and Semenov,⁴ and others, has gone far to prove the existence of allergic sinusitis in contrast or in addition to the old familiar forms usually interpreted as infectious in origin.

This recent conception involves the recognition of an underlying allergic state being responsible for many cases formerly designated as suppurative, nonsuppurative, catarrhal, fibrous, granular, and edematous. One can readily realize the importance in therapy and prognosis such a

new approach conveys. To arrive at a diagnosis of allergic sinusitis a more thorough inquiry and investigation thereby becomes necessary, the essential points of which are herewith briefly referred to.

1 History A positive family history of some form of allergy, such as hay fever, asthma, urticaria, angioneurotic edema, or eczema, is significant. Cooke and Vander Veer,⁵ Rackemann,^{6,7} and Rowe⁸ have long since definitely established a hereditary trend in the transmission of the allergic state. In allergic sinusitis this factor is likewise present in a sufficiently large enough number of cases to warrant inquiry and excite suspicion.

2 Symptomatology In addition to the usual symptoms of sinusitis, such as post-nasal drip, morning cough, and head pains, patients with allergic sinusitis frequently complain of paroxysmal sneezing and intermittent nasal obstruction. The intermittent nasal obstruction, varying from partial to complete, involves either one side or the other or both. While usually the discharge is profuse, thin, watery, and serous in character, occasionally it is thick mucoid. Only when an infection is present does the discharge become thick, tenacious, and purulent.

3 Examination Nasal examination discloses a pale, grayish white, or bluish gray edematous and watery mucous membrane which is characteristic of allergy. Frequently the mucosa is so very sensitive that the slightest touch of a nasal speculum or tip of a spray initiates a paroxysm of sneezing. Hypertrophy of the turbinates and thickening of the mucous membrane as a whole, with the presence of mucous and edematous polyps, are common observations. Although universal agreement on the etiology of mucous or

*Read at the Annual Clinical Congress of the American College of Surgeons,
New York Polyclinic Hospital, October 21, 1938*

edematous nasal polyps has not been reached, it is undoubtedly true that by far the vast majority of them are allergic in origin. An eosinophilic infiltration throughout the stroma in large numbers, particularly near the surface, is a constant observation in these cases.

4 Cytologic Studies Nasal smears in allergic sinusitis establish the presence of eosinophils in far larger numbers than normal. The process of making a nasal smear is so simple and easily performed that it should always be included in routine office examinations. Sinus washings and sputum examinations may also disclose a large percentage of eosinophils, while a blood eosinophilia completes the picture. It is frequently necessary to repeat the examinations of both nasal secretion and blood to establish the presence of eosinophils, since they vary in number from day to day. These repeated cytologic examinations of blood and secretions from the nose and paranasal sinuses are indispensable to a careful and thorough study of any case of suspected allergic sinusitis and should never be omitted.

5 Roentgenographic Examination The degree of opacity in an x-ray depends upon the amount of secretion and the edema or thickening of the lining sinus membranes due to the presence of granulations or polyps. In no way do they reveal the cause of the pathology. When fluid is present, its transitory nature may be disclosed by repeated x-ray examinations with lipiodol. According to Philips,⁹ this is not obligatory if the sinus exposures are taken in the erect position. Exposures in the erect position assure gravitation of the fluid to the floor of the antrums and frontal sinuses, permitting the air above the fluid level to act as a contrasting background to show the pathologic changes in clear relief.

6 Transillumination Whereas x-ray studies possess the advantage of penetrating all the paranasal sinuses, transillumination is reliable for examination of the frontals and antrums only. Nevertheless, transillumination is valuable. It is always available as an office procedure,



FIG 1 An outer edge of a nasal polyp showing marked hypertrophy and hyperplasia of the columnar epithelium with slight but definite thickening of the subepithelial basement membrane. Below this is a layer of plasma cells, eosinophils and lymphocytes, below which is edematous fibrous connective tissue containing smaller members of the same cells fairly evenly distributed throughout. A few small thickened blood vessels are noted.

entails no expense, and can be repeated indefinitely. As in x-ray pictures, transillumination gives presumptive evidence of diseased conditions but no special information regarding etiology.

7 Skin Tests Positive skin tests not only indicate the allergic state of an individual but are also a clue to the cause as well. It is our experience that intradermal skin tests are preferable to scratch, particularly in allergic sinusitis. A patient must be very sensitive to produce a positive test by means of the scratch method of testing, whereas intradermal skin tests pick up the slight sensitivities far more accurately. When the physician is in doubt as to the validity of the reaction, passive transfer should be employed. All skin reactions must be substantiated or corroborated by clinical tests. For this reason when foods are suspected, despite negative skin tests, it is frequently necessary to utilize trial or elimination diets.

Unfortunately bacterial skin reactions cannot be depended upon to disclose bacterial sensitivity. They are not at all like the cutaneous tests to pollen, which are immediate, or even the cutaneous tests to foods, which in some cases are delayed. Often they are actually negative in cases where we know definitely that bacterial sensitivity does exist.

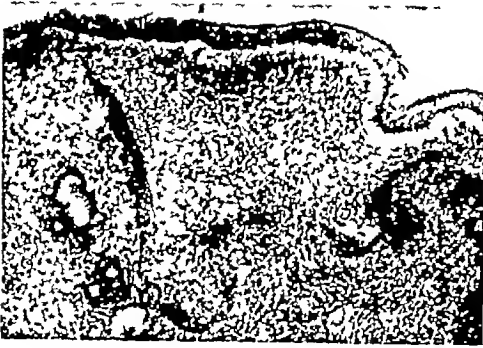


FIG 2 An outer edge of the same polyp showing a sharp demarcation of the normal epithelium from that which has already begun degenerating. The latter is recognized by a loss of individual cell delimitations, a general appearance of homogeneous tissue, with only a few nuclear fragments remaining from what once had been the hyperplastic and hypertrophied epithelial covering of the polyp. The basement membrane is markedly thickened, its fibrous connective tissue appearing to consist of thick fibrils with very few individual fibrocytes noted. Several dilated mucous glands and numerous small thickened capillaries are observed lying in the edematous subepithelial connective tissue. At one part of this section the infiltration with eosinophils, lymphocytes, and plasma cells are quite pronounced.

8 Tissue Examination The recent investigations of Latta and Schall¹⁰ and description of tissue changes by Hansel¹ demonstrate that a wide variation in the epithelium of the paranasal sinuses exists in all individuals. The character of the epithelium varies with such environmental influences as smoke, dust, and temperature. Repeated acute infections also produce marked changes. Because degeneration and regeneration of the tissue are constantly taking place, various degrees of hyperplasia are noted. In allergy, according to Hansel,¹ the size of the individual epithelial cells are increased and edema of the mucosa is present. Although the epithelium is not as thickened in allergy as in infection, the basement membrane frequently shows a distinct tendency toward thickening, and there is an associated eosinophilic infiltration. The edema and eosinophilic infiltration are most marked in the tunica propria, stroma, or subepithelial layer.

Now, in reviewing the allergic basis of sinusitis, is it presumptuous to suggest

that much of the failure in sinus surgery is due to the neglect of clinicians to distinguish these cases from the infectious type? Are not reliance upon a history of sinus symptomatology, the observations in a routine office examination, and particularly an x-ray report responsible for surgical intervention in most cases of sinus disease? When one considers that x-ray interpretations are based solely upon variations in tissue densities without respect to etiology, it is apparent that surgery should not be advised on this evidence alone.

Once the diagnosis of allergic sinusitis is made, even before the essential causes are actually discovered, it is generally advantageous to make the following suggestions. These are similar to the general instructions, given to asthmatic patients.

- 1 Carefully avoid all contact with dust. This is a frequent cause of allergic sinusitis. Your bedroom especially should be kept dust free, therefore eliminate, as far as possible, all woolen rugs, upholstered furniture, sofa pillows, curtains, draperies, vases, ornaments, and pictures.
- 2 Avoid contact with cats, dogs, birds, or any other hairy or feathered pet. Have no household pets for the time being. Stay away from horses, stables, and farms.
- 3 Remove all blooming plants or flowers in your home, and stay away from grasses, weeds, trees, and flowers.
- 4 Until otherwise instructed refrain from the use of cosmetics, bath salts, and face or talcum powders that contain orris root.
- 5 Avoid the use of insect powders and sprays.
- 6 If you have a Kapok mattress and pillow use it instead of feathers or hair.
- 7 As far as possible avoid cooking odors, smoke, perfumes, garage odors, fresh paint, and varnish.
- 8 Keep out of drafts. Avoid cross ventilation. During inclement weather protect yourself with proper clothing. Take no chances, at the first sign of a fresh cold remain indoors in a moderate and constant temperature.
- 9 Take no very cold or very hot baths or showers. Tepid baths are preferable. Do not go in swimming without permission.
- 10 Adhere strictly to the prescribed diet.

- 11 Do not use any nose drops other than those prescribed Do not take any cathartics without inquiry
- 12 Do not overexert yourself Avoid excitement, fatigue, emotional disturbances, or worry

Whenever elimination of the cause is possible, it is to be preferred. Miscellaneous allergens, such as animal epidermals and insect emanations, can usually be eradicated in this way. Food sensitizations are best controlled by substitutions or elimination. However, with such inhalants as pollen or house dust, for example, immunization is usually required. This consists of weekly inoculations, in gradually increased amounts of the antigen, according to the patient's degree of sensitivity. The injections are continued until immunity is established, then the intervals between inoculations are increased. In cases of bacterial sensitivity, an autogenous vaccine may be prepared from the secretion of the nose and sinuses. The initial dose of such a vaccine should be small, and considerable care must be exercised when increasing the dosage. The process of immunization requires skill and experience. Yet it is interesting to observe, when this has been accomplished in allergic sinusitis, how subsequent examinations will disclose a subsidence of secretion, a decrease in edema, a shrinkage of the turbinates, a gradual diminution of the polyps, and a return to normal.

Locally, nasal or sinus irrigations are employed to establish drainage and allow circulation of air in the sinuses. Epinephrine or ephedrine solutions are of value for shrinkage of the tissues, but it should be remembered that there is an abuse as well as a use of these drugs. Too frequent and too large a dosage produces an opposite effect to the normal physiologic action. Only in those cases of allergic sinusitis where obstruction exists to the point of interfering with drainage or where the entire picture is definitely complicated by infection should surgery be considered.

Conclusions

- 1 Allergic sinusitis is a definite dis-

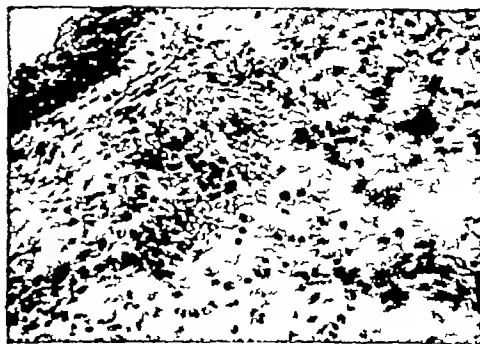


FIG 3 A high power photomicrograph to show more clearly the nature and the relationship of the various cells mentioned in Figs 1 and 2

ease. It may occur with or without secondary infection.

2 The diagnosis of allergic sinusitis depends upon careful consideration and correlation of the following data: (1) history, (2) symptomatology, (3) examination, (4) cytologic studies, (5) roentgenographic examination, (6) transillumination, (7) skin tests, and (8) tissue examination.

3 Disregard of the allergic factor in sinusitis is responsible for the frequency of much sinus surgery failure.

4 General instructions for patients suffering from allergic sinusitis are suggested to cope with the more important allergens.

5 Treatment of allergic sinusitis consists primarily in elimination, substitution, or immunization. Surgery is indicated only in those cases where obstruction exists to the point of interfering with drainage or where the entire picture is definitely complicated by infection.

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FOREIGN BODIES SWALLOWED BY CHILDREN

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DISAGREEMENT exists concerning the proper care of a child who has swallowed a foreign body. The medical literature is not extensive on this subject, but the public press frequently features cases of this kind with pictures of the before and after variety and the story of spectacular surgical intervention. These facts suggested a review of cases admitted to the Children's Surgical Service at Bellevue Hospital for the past ten years. Many patients were seen in our clinic who are not included here because the records were incomplete. Some did not return after the first visit. The cases in this series were all carefully followed. Foreign bodies in the esophagus or bronchus are not considered here because they are treated by the Nose and Throat Service.

People attempting suicide or suffering from mental disorders sometimes swallow foreign bodies¹. Others, such as side-show freaks do it for pecuniary gain. There is a recorded case in England,² which will be referred to in more detail later, where a young boy swallowed various objects on a dare if the amount wagered was sufficient.

The cases analyzed here are not of the aforementioned types. These children were brought to the hospital after having accidentally swallowed some foreign object. Why some were admitted and some were not is not always clear. The personal ideas of the physician who first saw the child undoubtedly was the determining factor in many cases. Our records disclose 41 cases varying in age from infancy to 13 years.

Age Group	Number
Less than 1 year	1
1- 3 years	13
3- 5 years	7
5- 7 years	5
7- 9 years	3
9-11 years	5
11-13 years	6

The group under 3 years of age is the

largest because at this time the child is becoming ambulatory and has developed the habit of putting objects into its mouth. Most of these accidents must be ascribed to negligence on the part of the mother. Children over these years, however, do accidentally swallow objects although not as frequently, and these incidents are due to carelessness on the child's part or to indifference to the danger of putting things into the mouth. One child swallowed the mouthpiece of a cheaply constructed toy whistle which she was blowing.

Alarm caused by the child's story rather than signs and symptoms of acute illness is the usual reason the child is brought to the hospital. This apprehension on the part of the parent is many times the most difficult aspect of the case, especially when it affects the proper treatment.

When symptoms were present, vomiting was the most common, occurring in 10 of our cases. In a few cases it had been induced by the parent in an attempt to cause the foreign body to be emitted.

This is a very unwise thing to do because of the danger of the object becoming lodged in the esophagus, a condition much more serious than if it remained in the stomach. Abdominal pain and sore throat were almost as frequently complained of as vomiting. The abdominal pain was never very definite in location or serious in character. Sore throat was not serious in any case. At times it was undoubtedly induced by some well-intentioned but misguided person who attempted to remove the foreign body manually from the throat—an excellent example of the adage, "the cure being worse than the disease." Consideration of other symptoms here is not necessary because of their infre-

quency

Frequency of Symptoms

Vomiting	10	Cough	1
Sore throat	8	Temperature	3
Epigastric pain	7	Distention	1
Abdominal distress	3	Nausea	1
Lacerated throat	1	Gagging	2
Anorexia	2	Syncope	1
Blood in stools	1		

The objects swallowed varied from pieces of glass bitten from the edge of a water tumbler to that of the head of a celluloid doll also bitten off—both incidents, no doubt, at the height of a gastro-nomic orgy

Pins, however, seemed to be the *entrée de jour*. There were straight pins, safety pins opened and closed, bobby pins, and button pins. Straight pins were the most frequent. There were several instances of two or more swallowed at the same sitting. One child showed two safety pins in the stomach, both opened. A pencil, eight centimeters in length with a blunt end, was swallowed without difficulty. The whole list is made up of the following: common pin, 9, open safety pin, 6, button, 2, nail, 5, button pin, 3, part of whistle, 1, pencil, 1, screw, 2, jack, 1, bolt, 1, metal trigger, 1, penny, 3, nickel, 2, glass, 1, bobby pin, 1, tack, 2, key, 1, head of celluloid doll, 1.

In this series of 41 cases covering a period of over ten years, no child was operated upon. This seems remarkable when the list of foreign bodies is studied. It definitely shows the ability of the gastrointestinal tract to marriage itself to many objects whose passage does not seem possible. Thirty-seven patients had no complications. Three developed acute pharyngitis with fever, and 1 developed bleeding from the rectum following the passage of a Red Cross pin.

Our treatment has been watchful waiting and careful observation with the aid of the x-ray and fluoroscope. The average time observed for all cases was four and one-half days. The longest period was one month, that of a child, aged 3, who swallowed, just before admission, two bobby pins. The child vomited once and had a small amount of bleeding from the mouth. The course of the pins was followed periodically by x-ray and fluoro-



FIG 1 Facsimile of objects swallowed in our series

scope until they were passed thirty days after admission.

In all cases, no cathartics were given, and the stools were examined carefully. Diet has been stressed by some as an aid in the passing of these bodies. Sauer² in 1932 attributed the passing of a twenty-five-cent piece in ten days to what he called Dr. Boots's nonsurgical treatment, which consisted of a coarse, high residue vegetable diet. Most of our cases were placed on a regular diet with the same result. A number of objects were passed following the giving of a barium meal for x-ray study. We do not recommend this as a treatment.

As previously stated none of our cases was operated upon. We feel that the use of surgery as treatment is seldom ever necessary. We have had in this series no objects that were pointed at both ends, such as needles and toothpicks. Bodies such as these are considered by many to be very dangerous and frequently to cause perforation of the bowel and peritonitis. No conclusion as to this group, unfortunately, can be made.

However, in the past few years several papers have been written on the surgical treatment of foreign bodies of the type found in our series. They were praised because they consisted of laparotomy in which the stomach was not opened and during which open safety pins were closed

and the objects were threaded to catheters in the stomach and removed through the mouth. We agree with Vinson and Deissler⁴ of the Mayo Clinic that these procedures should not be done, because practically all objects will pass if one is patient enough. A classic example of meddlesome surgery is found in the case of a boy, previously referred to, who started swallowing objects to win bets. His first excursion into this remunerative field was the swallowing of two pennies which, when he applied at the hospital apparently without symptoms, were immediately removed by operation. He made ten subsequent trips to the hospital for similar operations.

Summary

1 There were 41 patients treated for swallowing foreign bodies without operation.

2 Children under 3 years most often suffer this accident.

3 Negligence on the part of the mother and carelessness of the child are the underlying causes.

4 Symptoms are not marked. Vomiting, vague abdominal pain, and sore throat are the most common.

5 Pins, straight and safety, are the most frequent objects swallowed.

6 Operation is rarely ever necessary in these cases. Observation with x-ray and fluoroscope, examination of stools, and a regular diet is sufficient treatment. Cathartics and emetics should be avoided.

116 East 58th Street

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THE CONSCRIPTION OF BRITISH PHYSICIANS

Before the outbreak of war the majority of British physicians of military age voluntarily enrolled for war service in response to the request of the government. Subsequently conscription was adopted of all men of 21 years of age and then of older men by successive years of age. The application of conscription was not universal, as men in certain occupations held to be of national importance were exempted. Among the exempted occupations is the medical profession. The Central Emergency Committee of the British Medical Association has now unanimously recommended, according to a report in the *J.A.M.A.*, that physicians be removed from the list of reserved occupations. If this proposal is accepted, physicians

who have not yet reached the age of 28 will be come liable for compulsory service with the fighting forces in a medical capacity. Those at older age would automatically become liable as the proclamation age is raised. The committee does not desire that compulsion should be applied within six months of qualification. Under existing arrangements those who obtain resident posts at hospitals within the six-month period will be permitted to complete their appointment if it is not more than six months. Many of the older physicians, with heavy obligations, have joined up and therefore the committee feels that it would be fairer if medicine was withdrawn from the reserved occupations.

A LIFESAVING SERVICE

More than twelve thousand men, women, and children from all parts of the United States had their chests x-rayed at the World's Fair last year. About 10 or 12 per cent of the pictures showed evidences of tuberculosis, active or latent, notes the *New York Post*. Just how many persons were saved from long illness or even death by prompt treatment is not known. It is likely that the number is substantial.

The Medical Society of the County of Queens will continue to conduct its x-ray examinations in the Medicine and Public Health Building in the Hall of Man again this season. The charge will be only \$1.00. The time necessary for the picture to be taken will be less than a minute. A

committee of experts will interpret the films, and the results will be sent to the visitor's family physician.

Every reader of this newspaper, continues the *Post*, who visits the Fair ought to join the line through the x-ray booths. Early diagnosis and treatment is one of the most direct and effective weapons there is in the war on tuberculosis. It increases chances of absolute cure and cuts down needless expense. Not only that, but every person who knows himself to be infected is enabled to avoid passing the disease on to others. Tuberculosis is one scourge which modern medicine, if given half a chance, can wipe out completely.

MILK-BORNE BACILLARY DYSENTERY

Report of an Outbreak in New York State

JAMES J. QUINLIVAN, M.D., Saranac Lake, New York

(Assistant District State Health Officer, New York State Department of Health)

WHILE it is generally recognized that outbreaks of bacillary dysentery may be milk-borne, such outbreaks do not occur (or are not detected) as frequently as epidemics of scarlet fever, septic sore throat, and typhoid fever. In view of the relative rarity of reports of milk-borne dysentery in New York State, the following summary is presented. It will serve also as an addition to the already voluminous accumulation of data to the effect that a clean milk is not necessarily a safe milk and that safety in milk handling demands cleanliness plus pasteurization.

In the latter part of August, 1938, the district office of the State Department of Health at Saranac Lake received a routine report of a case of bacillary dysentery from a large summer camp located in the eastern part of the health district. The customary investigation was instituted with the following findings:

The camp concerned is one of the large, well-operated boys' camps in the Adirondack area and has been conducted each year for many years during the months of July and August. The total population of the camp at the time of the investigation was 340, consisting of 240 boys, 65 leaders and assistant leaders, a kitchen and caretaker group of 18, and a general supervisory staff of 17. The boys in the camp ranged from 9 to 17 years of age, the leaders and assistant leaders from 18 to 22 years of age, and the rest of the staff were adults.

The first case of the disease had appeared early in August. Reporting of the cases to the local health officer had at first been neglected, and, by the time the district office learned of the condition, over one-third of the boy population of the camp had been affected (Chart 1).

The typical clinical history was of sud-

den onset, characterized by headache and a chill or chilly feeling followed by nausea, vomiting, abdominal cramps, diarrhea, tenesmus, and fever ranging from 102 to 105 F. In one case, abdominal symptoms were so acute that the patient was removed to a hospital where an appendectomy was performed. Many of the cases had as many as twenty-five stools a day, and in about one-quarter of those affected blood was observed in the stools. The duration of the illness was from one to five days. There were no fatalities, and recovery was usually prompt without obvious sequelae. Fecal specimens were obtained from those actively ill at the time of the investigation, and dysentery bacilli of the mannitol-fermenting (Flexner) group were found in all specimens obtained from persons ill at that time.

The age distribution of the cases showed a preponderance among the younger members of the camp population. However, both resident physicians at the camp developed the illness.

AGE DISTRIBUTION OF CASES

Age Group Years	Number in Camp	Number Attached	Attack Rate, Percentage
9-11	18	15	83
12-14	122	37	30
15-17	100	29	29
18-22	65	16	25
Over 22	35	2	6

Investigation revealed no similar illnesses among persons living in the area in which the camp was located. The distribution of the cases in the various boys' cabins in the camp was uniform, and it seemed evident that the source of infection was common to the camp as a whole.

The menus for the meals served during the period of probable infection included boiled potatoes, meat and gravy, lettuce and tomatoes, butter, ice cream, and

and the objects were threaded to catheters in the stomach and removed through the mouth. We agree with Vinson and Deissler⁴ of the Mayo Clinic that these procedures should not be done, because practically all objects will pass if one is patient enough. A classic example of meddling surgery is found in the case of a boy, previously referred to, who started swallowing objects to win bets. His first excursion into this remunerative field was the swallowing of two pennies which, when he applied at the hospital apparently without symptoms, were immediately removed by operation. He made ten subsequent trips to the hospital for similar operations.

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Tuberculosis is one scourge which modern medicine, if given half a chance, can wipe out completely.

2 Epidemiologic evidence is presented implicating a raw milk supply as the vehicle of infection

3 Evidence tending to incriminate

one or more milk handlers as the source of the contamination is offered for consideration The source of the infection of the milk handlers was undetermined

CHAOS IN MEDICAL WELFARE

The chaotic condition of medical welfare services in this state is a clue to what may be expected if the government takes control of medical practice, believes the *New York Medical Week*. According to a report adopted by the House of Delegates of the Medical Society of the State of New York at the recent Annual Meeting, "There is a complete lack of standards, medical and economic, no attempt is made to gage the quality of medical care rendered, and the profession as a whole plays no part in the welfare program. Nearly everywhere decisions on medical questions are commonly made by lay workers."

This is the answer to that small minority of overoptimistic practitioners who believe that the profession could continue to set medical standards under political control. In virtually all of the bills for state medicine, lay administrators are authorized to avail themselves of medical advisory services but are not required to do so. The Wagner National Health Bill is a typical example.

In practice, as revealed in the House of Delegates' report, a few lay welfare officials show any inclination to seek professional advice even on important medical questions. "Medical men have no authority to maintain professional standards, and they act only in an advisory capacity in a few localities where welfare officers have sought or accepted their advice." Frequently "free choice of physicians is arbitrarily limited by

welfare officers according to their own preferences or rulings."

The delusion that state medicine would improve the economic status of the profession is also shattered by the House of Delegates' report on actual conditions where the government is in control. "The 'temporary emergency' scale of medical fees has been frozen into the permanent program. No appreciable reduction has been made in the red tape involved in reporting and billing." In many sections physicians prefer "to treat their welfare patients without charge rather than make out the voluminous reports required to collect a minimal fee."

With the exception of a few communities where enlightened welfare officials have sought the advice of organized medicine and embodied its standards in their rules, the medical welfare services of the state reflect a deplorable lack of medical knowledge and experience. As the House of Delegates' report observes, "The principles governing medical relief service will be the principles under which we will serve the low-income groups of tomorrow." It is, therefore, of the utmost importance that the State Welfare Department cooperate with organized medicine in the formulation of an adequate and satisfactory medical welfare plan. If this cannot be accomplished by negotiation, it will be necessary to seek revision of the state welfare laws, making medical advice a "must" instead of a "may."

MALINGERING

Disease simulation is one of the characteristics of war psychosis. It constantly changes its methods and its maladies, says a Paris letter to the *J.A.M.A.* To the old devices found in all armies and at all times and brought to a high degree of perfection among colonial troops has been added the technic of malingering that has received its inspiration from recent medical discoveries. Icterus, for example, is induced by picric acid, 0.25 Gm. sufficing to color the tissues and the mucosa from eight to fifteen hours after ingestion. Repetition of the doses provokes symptoms of true catarrhal jaundice. It is not rare for a false icterus to be superimposed on a toxic icterus. However, disease simulation is met by improved methods of detection, such as that of detecting picric acid in the urine by the Kohn-Abrest reaction or picramic acid by Derrien's reaction. Albuminuria is simulated by taking white of egg just before the examination or by adroitly adding it to the urine at the time of the examination. In such cases, however, microscopic examinations fail to disclose the cytologic substances of nephritis. Furthermore, white of egg contains abundant and diversified flora that is easily discovered. In one case, re-

ported by Maurice Perrin to a gathering of army surgeons, the dilution of white of egg was kept in a small rubber flask that could be easily concealed and used. Arrhythmia, tachycardia, and auriculoventricular dissociations are induced by strong doses of caffeine of from 0.8 to 1.5 Gm. This is easily detected in the urine. Disease simulators have learned the thermogenic properties of nitrate derivatives of the benzene nucleus and use them to provoke fever. Paget reported a case of glycosuria due to the injection of 5 mg. of phlorhizin. Barbiturates have been employed to cause coma. Various chemical intoxications have been detected, whenever suspected, by close observation and repeated tests. Assumed deafness and blindness have been unmasked by specialized methods, as well as induced abscesses, cutaneous ulcerations due to common vesicant substances, voluntary mutilations, and conjunctivitis. Nervous and mental simulations are the most difficult to uncover. Observation by itself does not suffice. It requires an infinite amount of patience and skill on the part of the physician to trap the offender. Often friendly counsels will prevent a recurrence of false representations.

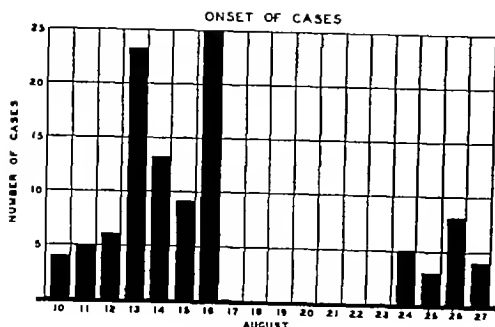


CHART 1

milk Inquiry revealed that these foods, with the exception of milk, were consumed in approximately equal quantities by all age groups in the camp. Unusual care was observed in the preparation and handling of food, and there was no history of illness among food handlers. Stool specimens obtained from food handlers were negative.

The camp water supply was used by several groups, totaling 68 adults and 17 children who resided outside the camp, none of whom developed dysentery. Moreover, bacteriologic examinations of the water supply showed no evidence of pollution, and a survey of the water system by a sanitary engineer failed to reveal any evidence of pollution. Since a non-potable water supply was present in the camp for fire protection, the possibility of cross connections was considered but was eliminated by careful inspection.

The one variable factor apparent was the milk consumption at meals. All the boys drank milk, but the older staff members often did not drink it, using coffee instead. The average milk consumption among the boys was three or more glasses each day, among the adults much less, and some not at all.

The milk supply was entirely Grade A Raw, obtained from two dairies (Dairy X and Dairy Y) which during the camp period sold practically their entire output to the camp. The amount from each dairy was 150 to 190 quarts daily. In addition, a supplementary supply was obtained from a third dairy (Dairy Z) on August 5, 6, 7, 8, 9, 16, 18, 19, 21, and 22. The milk from all the dairies was pooled

in the camp kitchen and served in such a way that it was impossible to trace the product of the individual dairies.

Fecal specimens were obtained from milk handlers in all three dairies, and dysentery bacilli of the Flexner group were isolated from the feces of two of the milkers in Dairy X. This dairy had been generally considered as above average in methods of milk production and handling, and its proprietor had been considered a very cooperative and progressive dairyman. During the summer season for several years, milk from this dairy had been sold to the camp. During the balance of the year it went to a near-by receiving plant for pasteurization and shipment to New York City.

The two milkers with positive feces were father and son. They had been doing a large part of the milking and milk handling on the dairy farm, although assisted from time to time by the owner and his three sons. They both denied any history of gastroenteritis, diarrhea, colic, or "looseness," and they stated that they had had no illnesses of the above type at any time in the past. Milker A, the son, had begun his work at the dairy in the middle of June and had worked there regularly since then. He lived on the farm in the home of the operator and owner. On August 3 his father, Milker B, came to live at the owner's home also and from that time on assisted in the milking.

The owner's household consisted of himself, his wife, and two sons. None of these gave any history of a suggestive illness or indisposition. Another son of the owner, living in a house near-by, gave no history of illness in himself, his wife, or his child. He was particularly emphatic in stating that the child, about one year old, who routinely drank the milk from the farm (unheated) had at no time during the summer been ill.

Summary

1. An outbreak of bacillary dysentery consisting of 105 cases in a boys' summer camp that had a population of 340 is here reported.

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Maternal Welfare

Diet in Pregnancy

THOSE who have interested themselves in this subject agree that diet in pregnancy is important. Some physicians seem to feel that they have fulfilled their obligations to prenatal patients when they tell them that they should be "careful of what they eat." Patients are entitled to precise dietary instructions. While it is generally understood that the pregnant woman does not have to "eat for two," many women are allowed to eat excessively, thereby putting undue strain on the systems of elimination. A well-balanced diet in pregnancy is essential. It must be kept in mind that the normal gain is approximately 20 pounds.

Proteins

It was quite generally felt at one time that excessive protein intake might be a factor in producing toxemias. This view is open to question, yet it is probably well to limit protein intake to a reasonable amount. This may be accomplished by recommending the use of meat not more than six times a week, fish once a week, and not more than one egg a day—except as eggs may be used in cooking.

Fats and Starches

Fatty and starchy foods must be restricted if the patient is to stay within the bounds of normal weight gain. It is not necessary to eliminate such foods, but definite restrictions should be placed on foods known to contain large amounts of starches, sugars, and fats.

Vegetables and Fruits

Approximately 90 per cent of the diet should consist of fruit and vegetables. If the patient can be made to see this point, the rest of the diet automatically takes care of itself. It is well to caution against too many "creamed" vegetables and casserole dishes and to warn against the use of large amounts of butter in preparing foods. "French dressing" is preferable to other dressings.

Milk and Beverages

Milk still remains the "perfect food" in pregnancy. The minimum intake should be one quart in twenty-four hours. Such an amount, with the balanced diet outlined above, should care for the calcium demands of pregnancy. However, if there is evidence of maternal calcium deficiency, such as dental caries or brittle nails, additional calcium should be prescribed. Here

it must be remembered that vitamin D is necessary to activate the calcium.

Tea and coffee may be taken unless contraindicated, but not more than three cups daily.

Daily Menu

This dietary regimen gives the patient an excellent general idea of the requirements for pregnancy. It is lacking, however, in specificity. Thus, it is necessary to suggest a daily menu.

Breakfast—Fruit or vegetable juice. If bulk is desirable, a whole orange or half a grapefruit may be substituted. Two tablespoons of cereal are permissible—here milk should be used instead of cream. One thin piece of toast with a small amount of butter. **Beverage**

Lunch—Fruit or vegetable salad. Two or three crackers. Glass of milk.

Dinner—A well-balanced meal, but no more in volume than the patient is accustomed to. There should be at least two cooked vegetables, one helping of meat or fish, and one piece of bread. **Dessert**—fresh fruit. **Beverage**

Midmeal hunger should be appeased with milk. "Midnight lunches" should be discouraged.

General

Highly seasoned and indigestible foods should be avoided, since it is well known that the gastrointestinal tract is hyperirritable. Mild dietary indiscretions often result in digestive upsets.

We must also warn that "food sprees" may result in excessive weight gain. It may be quite discouraging to the patient if she adheres to a common-sense diet throughout the week and seeks her "reward" by enjoying one epicurean spread. This "reward" may result in a permanent 2- or 3-pound gain. Therefore, the patient must be enjoined to observe her diet at all times.

Patients should be informed, in all sincerity, that adherence to careful dietary principles will result in a feeling of well-being, as well as aid in prevention of complications that might follow as unnecessary strain on the systems of elimination.

The purpose of this article is to emphasize the absolute importance of being specific in dietary instructions to prenatal patients. Each physician is entitled to his own ideas on content of a diet, yet he must be specific in his instructions to the patient. In the article on "Prenatal Instructions," appearing in the *JOURNAL* of June 1, 1940, it was pointed out that instructions should be in written or printed form. This is likewise true in "Diet in Pregnancy."

be subordinated to a teacher of physical education as it is at present.

I think most of you realize that it is going to be a terribly hard job to get this health function out of the State Department of Education. It is their baby. They started it a good many years ago. They have built up quite an organization, and, while they do not function for all school children but leave it to departments of health in most cities to see to it that the children of other than the public schools (that is the parochial and private school children) have some health supervision, nevertheless they maintain their own organization, and it is very unlikely that a change would ever occur which would transfer this whole function to the State Department of Health. Therefore, the more likely thing is that we may be able to persuade the State Department of Education to bring back its school medical inspection service under the direction of a physician as it was some years ago, and that this physician may possibly work in harmony with the State Department of Health which still indirectly through local boards of health supervises the health work in the schools that are not public schools.

I can see no reason that the teachings of socialized medicine will be disseminated any more rapidly through a State Department of Health and its officials who have to filter through the local physicians, most of whom are practicing physicians as well as health officers—no more likelihood of these teachings filtering through that particular group than they might filter through the Department of Education, and I believe that you will do well after discussing this to again pass the recommendations made by your Committee.

DR. ARTHUR J. BEDELL, *Albany*. If I understand correctly, Dr. Mitchell's Committee has been actively engaged in this problem. I, therefore, ask through you that he come before us and tell us the present status of this investigation.

SPEAKER FLYNN. Dr. Mitchell, will you kindly comply with that request?

DR. O. W. H. MITCHELL, *Onondaga*. Mr. Speaker and Members of the House of Delegates, I want to compliment Dr. Schiff for his explanation. I think he has done an excellent job. I don't know there is anything I can add.

This problem has concerned the Committee on which I have served for some time, and we have given a great deal of attention to it. We have sought the advice of those who we believed know the most about it, representatives from the State Department of Health, representatives from the State Department of Education, representatives of the American Pediatrics Association, representatives of the school physicians and health officials, as well as men in private practice, and I do not know where else we could turn in order to get comment which would be useful in attempting to draw up the proper recommendations to present to you. I do not know where we could turn to get any better discussion of the subject.

As a result of these conferences, the last one of which was held in New York City just a few weeks ago, it was decided that we should make the report which has been given here. Of course, it was worded and written by our Committee, and particularly by Dr. Farmer.

As all of you have been told the present setup within the State Department of Education is a Division of Health and Physical Education. Now I think just by the way that Division is named we would naturally suppose that a physician would head it—it is the Division of Health and Physical Education—but it has not worked out that way, and a gentleman who is a doctor, that is a Ph.D. in Physical Education, is the Director of the Division.

It is not that we are opposed to carrying on the fine work in physical education that we are attempting to bring about some reorganization, but we do not believe that any special subject or any specialty, as it were, should be chosen to head up a school health program. We believe that physical education is an activity which is so specialized that it should be in its particular assignment, or bureau, or whatever you want to call it, separate from the school health service. Consequently, we felt we should attempt to get that reorganization.

Another thing is that the school health services should be available to all of the children. It does not make any difference what school they are in, they should have the benefit of anything good that we have to offer. In New York City the school health service is in the Department of Health, in Buffalo it is in the Department of Health, as it is also in Rochester.

I don't think there is any fear on the part of anyone that simply because you put the school health service in the Department of Health that we are going to take one long jump over into whatever you care to call it—state medicine, socialized medicine, and the various expressions that get us a little jittery at times. What difference does it make whether it is in the Education Department or in the Health Department? The work would be exactly the same, and for continuity of service, beginning with your prenatal work and the preschool child, why should it not continue in the Health Department? That is a very good argument for transferring it.

Another thing that we must keep in mind is that, with the present setup by having it in the Department of Education, it is necessary to have a separate setup with a health officer, or the Bureau of Health, or the Department of Health, depending upon the size of the city and its political organization, to look after your private schools. Therefore, if we take a city like the one in which I live, Syracuse, we have our department of education with this large school health service, we have our relatively large school health service in the Department of Health to look after the parochial and private schools. Consequently this contention that we are drifting in the direction of socialized medicine does not make any deep impression upon me. If we are to continue this inquiry and to have these conferences, I see no objection if somebody wants to make a motion that we try to do our work a little better. I will accept that much more seriously if you insist than the other. Another thing to keep in mind is we are constantly keeping up our connections with all these other groups.

I am wasting your time as well as mine, and I think it would be a very fine thing to do to give your approval to the recommendation which has been brought in by the Reference Committee.

I thank you! (Applause)

HOUSE OF DELEGATES
MINUTES OF THE ANNUAL MEETING
[Continued from page 980 of June 15 issue]

May 6 and 7, 1940

Evening Session

Monday, May 6, 1940

The session reconvened at nine o'clock
SPEAKER FLYNN The House will be in order Is there a quorum present, Mr Secretary?

SECRETARY IRVING There is
SPEAKER FLYNN The Chair recognizes Dr Heyl, of Westchester, who will talk on the motion to reconsider the Report of the Reference Committee on the Report of the Council—Part I, Dr Leo Schiff, Chairman, relative to School Health Program

DR ARTHUR F HEYL, *Westchester* In that motion for reconsideration of a resolution which was passed on a report of Dr Schiff's Committee, I made a support for the reconsideration on the basis that if by chance the responsibility for the health of school children were shifted from the Board of Education to the State Board of Health, we might in the future see the development year by year of socialized medicine through teachings thrown out by the employees of the State Health Department to those who are children now and will be adults ten and fifteen years from now

I further made the statement that reconsideration was advisable in view of the fact that I, for one, and probably many others, permitted that resolution to pass without discussion Therefore, I feel that I have no more discussion to offer at this time, but should enjoy hearing the discussion of other members of the House of Delegates If point by point, as this discussion develops, I might have something else to add, I trust that the Speaker will permit me another chance

SPEAKER FLYNN The original motion is up for discussion

DR. JOHN B D'ALBORA, *Kings* May we have the original motion read?

SPEAKER FLYNN Yes Will you do that, Dr Schiff?

DR SCHIFF To refresh your memories a little This is the result of the findings of a series of discussions held by the Council Subcommittee on Public Health and Medical Education with educators, those interested in medical school inspection, and various other groups at least twice during the course of last year

One of the points that was brought out and on which practically all of the groups concerned concurred was that there were two phases of school medical work, one being the teaching of health and physical education and the other being the actual health work among the children It was practically agreed that the teaching should be left to a teacher group but that the health work, which was similar to health work among other groups, industrial or what not, was the work of a physician and should be in an organ-

ization that was headed by a physician, and so we get to this recommendation

"We concur with the conclusions of the group, representing various organizations and individuals interested in this program called together for study of this question, that work in the schools 'that is distinctly of a medical nature should be under the direction of a physician who should be responsible to the executive administrators or school board, and not to them through an intermediary person who is not a physician', while 'matters of an educational nature should be in the hands of those who were trained to be teachers' We further approve of the conclusion that the aims of School Health Service should be 'to provide the best type of health service possible for all school children, whether attending public or private schools, in order to impress on the child what should comprise good medical care, and that the advice given to children should be based only on complete and careful examination.'

"We approve the recommendation of the Committee 'that a change be made in the organization of the present Division of Health and Physical Education, preferably that the present bureau of health service be transferred to the State Department of Health, but that if this is not possible, such a division be organized in the State Department of Education, and that to it be assigned all medical problems, while the teaching of health, including physical education, be left, as at present, in the Division of Physical Education of the State Department of Education, so that the teaching of health would be in the Department of Education, as heretofore, while the supplying of health service would be either in the State Department of Health or in a separate division headed by a medical man'

"To this we would add an additional recommendation that in the administration of health service in the schools, the employment of private physicians be encouraged wherever possible."

Mr Speaker, may I speak to this?

SPEAKER FLYNN You may

DR. SCHIFF You will note that the resolution calls for reorganization by transferring the medical function of the double function Bureau of Health and Physical Education of the State Department of Education to a department that is primarily interested in health, whether it be of the preschool child, the school child, or the individual that has left school, and that is the State Department of Health, but that if this is not possible at least we ask that the administration of a department of health, as it were, inside of the school department—the medical end of the Division of Health and Physical Education—be left to a medical man, who shall not

to practice medicine or give advice on medical problems

Therefore, I concur that there should be two bureaus set up—one pertaining to the education side of it, and the other entirely separate which deals entirely with the medical side of this proposition. There should be a connection between these two, a liaison connection, so they do not work absolutely independently but are independent in their management, and so in their operation they work in cooperation for the welfare and health of the school child, which is of paramount importance, if what we are trying to do is carried out.

I thank you, and I hope I have not taken up too much of your time (Applause)

There were calls for the question

DR. HBYL I have only one more point, and perhaps it is very lame in view of the able reasons given by Dr Schiff, Dr Mitchell, and Dr Van Kleeck for the first portion of this resolution, but I will make it just the same

They state that the Department of Health operates in the capacity of doing medical school health service in the cities of New York, Buffalo, and Rochester—and I have no doubt to the best of advantage—but that is in a decentralized manner from the State Department of Health, whereas if the State Department of Health takes this function over in its entirety for the rest of the state we lose this decentralized feature, which is most important to individual sections which are not cities like New York, Rochester, and Buffalo

The question was called for, and the motion was put to a vote, and was carried

61 Report of Reference Committee on New Business A on Medical Expense Indemnity Insurance Plans

SECTION 58

DR EDWARD R CUNNIFFE This is a report on the resolution introduced by Dr James L. Reuling, in conjunction with the Medical Society of the County of Queens

"WHEREAS, there are springing up many nonprofit Medical Expense Indemnity Insurance Companies in various parts of the State, some of whom already have permits to operate, and

"WHEREAS, solicitation of physician membership either with or without registration fee has been begun, and

"WHEREAS, no official approval has been given by the Medical Society of the State of New York, and in most instances, the local county medical societies have not as yet been given approval to any plan, therefore be it

Resolved, that this House of Delegates go on record as disapproving such registration by members of the Medical Society of the State of New York until such medical expense plans have been approved by the State Society or its component county societies "

The Committee approves of this resolution with the deleting of the words 'approved by the State Society,' which makes it read

'Be It Resolved, that this House of Delegates go on record as disapproving such registration by members of the Medical Society of the State of New York until such medical expense plans have been approved by the county society "

This is in accordance with one of the ten principles adopted by the House of Delegates of the American Medical Association at the 1938 Chicago meeting which stated that all voluntary insurance plans must have the approval of the county society in which it operates, and must have free choice of physician

I move you the adoption of this report

The motion was seconded, and as there was no discussion, it was put to a vote, and was unanimously carried

62 Amendment—Duties of Officers

DR. GEORGE W KOSMAK, *New York* This involves a change in the constitution by adding a new Section, 10-A, to Chapter VII, Duties of Officers, same to read

"An assistant to the Treasurer shall be appointed annually by the Council at its organization meeting, who shall serve and be subject to the supervision and order of the Treasurer, shall be adequately bonded, have no voice or vote in any meeting, shall be suitably remunerated through an order of the Council and be empowered to sign checks in special rotating funds to be set up as needed by the Trustees "

SPEAKER FLYNN This cannot be acted on tonight, but will stay in the Secretary's Office until next year

Are there any further reports of Reference Committees?

63 Reconsideration Asked on Reference Committee Report on Laboratory Medicine—Practiced by Laymen

SECTIONS 28, 48

DR. STEPHEN H CURTIS, *Rensselaer* May I ask that a part of Dr Cunniffe's Reference Committee's report be reconsidered as it pertains to the resolution that was introduced by Dr Heyd at the request of the State Pathological Society?

SPEAKER FLYNN Did you vote for its adoption?

DR CURTIS I didn't vote, in fact, I was not here.

SPEAKER FLYNN Then you cannot make a motion to reconsider it if you did not vote on it and were not here.

DR CURTIS But it is important.

SPEAKER FLYNN I am sorry, but a motion for its reconsideration must be made by someone who voted in the affirmative on it

DR. PETER M MURRAY, *New York City* I voted on it in the affirmative, so I will move for its reconsideration

SPEAKER FLYNN Come up and read it then, Dr Murray

DR MURRAY This is the resolution

"The following resolution which was submitted by the Kansas State Department of Health and approved by the Surgeon General of the Public Health Service

"Resolved, that the House of Delegates of the Medical Society of the State of New York extend its good offices in suppressing the practice of laboratory medicine by laymen and to use its strong influence toward establishing a proper relationship between the city and state department of health laboratories and physicians who practice pathology, limiting the work of the state and city departments of health to communicable diseases and

DR. LOUIS A. VAN KLECK, *Nassau* I would like to speak on this. It has been my honor for the past year to be president of the New York State Association of School Physicians, so for the past year I have been very close to this situation. You can talk here all night whether you are going to decide to put this thing in the Department of Health or leave it in the Department of Education, but I will bet you two to one it will stay in the Department of Education, because it is going to be hard to get it out of there now.

The trouble with the whole thing is this. It lies right here in this House of Delegates, in organized medicine, that we let this thing get away from us. We should have insisted right from the start that the qualifications for the head of the Division of Health and Physical Education in the Education Department be those pertaining to an M.D. and not a Ph.D. (Applause) That is where we, as organized medicine, fell down, and today you have a Ph.D. in the saddle, and it would be a whole lot easier to keep him out than once he is in getting him out. He won his position by competitive examinations in civil service. He fulfilled the requirements of the law.

True, it has been rather difficult to work under a Ph.D. However, let me say at the outset that my remarks are in no way personal, and, if anybody is going to take them as directed against any personality, I am through because the man who is at the head of this department, the Director of Physical Education and School Health is a personal friend of mine, and as far as he personally is concerned it has been a pleasure to work with him for the past year, but I am decidedly in favor of splitting this department under health and physical education. I want you to understand that the physical educators are at the head of this thing right now, and if you have any doubt about it you should have gone on the twenty-sixth of December to Syracuse to the school superintendents' and physical educators' meeting. I was there. I heard one man, who was a prominent educator—and don't make any mistake about this at all, it all emanates from Teachers' College at Columbia University, I am speaking in the House of Delegates, so I am speaking frankly and openly, without restraint—and this man has an M.D. (I am quoting his remarks from memory because I have tried in every way possible since the twenty-sixth of December to get a copy of his address, yet I have been unable to do so in spite of the fact that the Director sent me a carbon copy of the letter that he wrote to this gentleman asking him to send me a copy of his paper.) While I may be in error as to his exact words, this is the gist of it—get up before an educational body and say that physiology, anatomy, medicine, surgery, or the fundamental principles of a medical training do not fit a man in any way to recognize the normal, healthy child in school. I take exception to that, and when he makes such a statement in public I reserve the right to combat that statement.

I do not think any man can make a proper, careful physical examination to ascertain whether children are normal or abnormal unless he has had the proper thorough education that we, as doctors, have to take in the fundamentals of medicine. You cannot take a man and give

him two years in an academic course and two years of physical diagnosis and then make him a school inspector and have him in charge of the medical department of a school, and then as an excuse for that say that thereby there will be no practicing of medicine in the schools because he is not qualified to practice medicine.

As I said I may be in error when I am quoting this man, but I am quoting from memory, and in spite of all the efforts to obtain a copy of his exact words I cannot get anything, and the man will not submit his paper to me—and he is a prominent educator.

Where does this thing lead to? I have been a medical inspector in the schools since 1914. Before I had this position I have had this past year, I was president of my county society, yet in my own school there is a graduate of the Springfield College of Physical Education over me, and I cannot contact my Board of Education or the Superintendent except through this physical trainer, the football coach. I have gone to the Superintendent of the Nassau County Tuberculosis Sanatorium to work out a problem or a plan for case finding tuberculosis among school children and to examine even the adult personnel of the school, including the teachers, to find out whether there was an open case of tuberculosis, yet I cannot get my plan to the Board of Education. I go to the physical educator, and there I stop. That is where your Division, from the lack of a medical man at the head of it, has gone.

The physical educationalists are perfectly all right. They are trained in education. The doctors are not trained in education. This thing, however, has gone on to such a point where we are going to have to have a doctor at the head of it. How you are going to go about getting him, I don't know. I think we are very fortunate in having a man at the head of this Division who is of the type that the present man is, for I will say this for him. He has given the doctors a square break. It is only that his actions have been misinterpreted through the state in various places—and I know because I have been pretty well in contact with the various school doctors throughout the state in the past year.

What you are going to do about it now, I don't know. We have got to right the wrong occasioned by our not having written the qualifications when the position was open that the head must primarily be an M.D. Because that was not done, we have not a practicing physician or a doctor of medicine at the head of the Division today.

With a few exceptions throughout the state among the medical inspectors of the state there are not many men who are qualified to teach. They are not trained as educators, they are trained as physicians to look after health. There are a few exceptions where men doing school work are trained educators, but in general you cannot expect a doctor to be an educator and teach health in the school. However, he should be in a position where he gives advice, and there ought to be set up two heads, and in the medical department of the Department of Education from Albany down there should only be doctors of medicine. The physical educators should deal with their side of the proposition because they are trained in education, and they have had the training to fit them to teach but not

medical societies have their own particular problems which they best understand and to which they are best responsible for answer. Now if we are to enunciate a new principle creating a hierarchy which defeats the purpose of some of the resolutions we have already acted upon favorably, we come forth as running with the hares and hunting with the hounds.

I believe that this amendment is dangerous. It is dangerous to democratic procedure. It is dangerous to the fact that component medical societies having their own particular local interests at heart are best capable of enunciating the principles, which must then ascend to the head of the organization rather than dictation from above down. (Applause)

The question was called for, and the motion to adopt the first amendment was put to a vote, and was lost.

SECOND AMENDMENT

SECRETARY IRVING: The next amendment to the Constitution and Bylaws was originally proposed by Dr. Rooney as a revision, going back to the old method of council executive committee and standing committees. That was acted on after it had laid over a year at the last meeting of the House of Delegates. It was tabled until this year. It comes back automatically to the meeting tonight.

It is far too long to read it. It has been published, and I think, Mr. Speaker, it should be considered as published.

DR. GEORGE W. KOSMAK, *New York*: What page does it appear on?

SECRETARY IRVING: Pages 40, *et seq.*, of the reprint.

SPEAKER FLYNN: What action do you wish to take upon it?

CHORUS: Table it!

DR. JOHN L. BAUER, *Kings*: We must not table this amendment. We must act on it tonight. I move that we are opposed to the amendments that appear here under the caption "Second Amendment" on pages 40, 41, 42, 43 and part of 44 of the reprint.

DR. ALEC N. THOMSON, *Kings*: I second that motion.

VICE-SPEAKER BAUER: I rise to a point of order. The motion is already before the House for adoption. Dr. John Bauer's motion can be accomplished by defeating the motion which is already before the House calling for the adoption of this second amendment.

DR. JOHN L. BAUER: I move we act upon the second amendment as a whole, at one time.

DR. THOMSON: I second that motion.

CHORUS: What is it all about? Summarize it. Don't read it.

SPEAKER FLYNN: What it would do would be to go back to the old system that we formerly had.

VICE-SPEAKER BAUER: For the benefit of the members who were not delegates last year, this in substance changes the Constitution and Bylaws back to what they were before three years ago—namely, doing away with the present elective Council, and having the district branch presidents together with the officers form a council and an executive committee drawn from that council for the transaction of the business which the present Council now carries on.

I think those who are familiar with the activities of the present Council realize that it is a

much more efficient way of handling business, that the committee problems have been handled with smaller committees and with less expense to the Society, and to go back to the old system would certainly be turning back the page. Personally I want to speak against the adoption of this so-called second amendment.

DR. JOHN L. BAUER: I renew my motion that we act upon the second amendment as a whole, at one time.

The motion was seconded, and as there was no discussion, it was put to a vote, and was unanimously carried.

SPEAKER FLYNN: Now on the motion to adopt the second amendment to the Constitution and Bylaws as printed and distributed to you.

The question was called for, and the motion was put to a vote, and was lost.

65 Public Health Laboratories, and Laboratory Medicine Practiced by Laymen

SECTION 81

DR. CHAS. GORDON HEYD, *New York*: Mr. Speaker, may I introduce new business?

SPEAKER FLYNN: Yes.

DR. HEYD: Mr. Speaker and Members of the House, the pathologists and the other boys are in considerable difficulty, and since I sponsored one resolution, I crave your courtesy to try to clarify the atmosphere.

'Be It Resolved That'

- 1 The House of Delegates go on record as disapproving laboratory medicine by laymen or nonmedical personnel,
- 2 That measures for establishing a proper relationship between city and state departments of health laboratories and physicians who practice pathology be endorsed,
- 3 That the work of state and city departments of health be limited to the diagnosis of communicable diseases, except where the diagnostic facilities of state and city health departments are the only diagnostic means available for indigent patients."

I move this resolution.

SPEAKER FLYNN: It will be referred to the Committee on New Business A, of which Dr. Edward Cunniffe is the Chairman.

66 Report of Reference Committee on New Business B, on Medical Practice Act—Study of Enforcement and New York State Annual Report

SECTION 59

DR. NORMAN S. MOORE: This is on the resolution introduced by Dr. E. C. Wood, of the Medical Society of the County of Westchester, reading:

"WHEREAS, every licensed physician in the State of New York is assessed a registration fee annually, to provide funds which are presumably devoted to enforcement of the Medical Practice Act, and

"WHEREAS, no information is officially and regularly available to the physicians of the State of New York as to the methods employed and results obtained in the enforcement of the Medical Practice Act by the State Education Department, be it

"Resolved, that the Council of the Medical Society of the State of New York designate a

the care of indigents. Such an effort on the part of the House of Delegates of the State of New York would be consistent with its activities with regard to the practice of other specialties in medicine. The House of Delegates suggest that this resolution be submitted to the House of Delegates of the American Medical Association."

And this is the Committee's report thereon, which was accepted by the House.

"The Committee is very much in favor of that portion of the resolution which has to do with suppressing the practice of laboratory medicine by laymen and also favors establishing a proper relationship between the city and state departments of health laboratories and physicians who practice pathology, limiting the work of the state and city departments of health to communicable diseases and the care of indigents in localities where it is feasible. However, there are many parts of New York State where the physician has no pathologic service except that rendered by the city and the state departments of health, and the adoption of this resolution would therefore deprive him of pathologic services except for those communicable diseases and indigent patients. Therefore, at the present time, the Reference Committee disapproves of this resolution, and I recommend the acceptance of the report of the Committee."

Now I move for the reconsideration of that action.

The motion was seconded, and as there was no discussion, it was put to a vote, and was declared lost.

SPEAKER FLYNN Are there any further reports of Reference Committees?

(There was no response.)

64 Amendments to Constitution and Bylaws

SPEAKER FLYNN There are two amendments to the Constitution and Bylaws to be acted on that were submitted at the meeting of the House of Delegates last year.

SECRETARY IRVING Yes, and both amendments are in your annual reports, and have been published.

FIRST AMENDMENT

BYLAWS—CHAPTER XV, COMPONENT COUNTY MEDICAL SOCIETIES

Amend by adding a new Section 7 to read

"The component county medical societies, their officers or committeemen, shall not initiate or participate in any activities, outside of the structure of the Medical Society of the State of New York, which are contrary to the policies of the Medical Society of the State of New York, as expressed by the actions or in resolutions of the House of Delegates or its authorized representative bodies. No member shall in any public paper, discussion, or hearing hold himself by direct statement or implication as representing the Medical Society of the State of New York, or any component county medical society, unless he shall actually have been so authorized by such Society, or a legally constituted representative board or committee of same having the power to confer such authority."

SPEAKER FLYNN This is before you for consideration.

DR. EDWARD K. BARKS, *New York* I

am speaking against this proposed amendment, and representing the opinion of the delegates of the Medical Society of the County of New York, we feel that this amendment, especially the first section as now worded, imposes unlimited restrictions and curtails severely the actions and the freedom of expression of the various county societies, the committeemen, the officers, and the membership. We think it is a gag law, and we urge that the delegates join with us in defeating this proposed amendment.

DR. LAURANCE D. REDWAY, *Westchester* Many of you may remember that I have discussed this motion previously, not in its present form but in the form in which it appeared last year.

In its present form I think I may call your attention to two things. The amendment seeks to give the Society control over unauthorized representation by unauthorized individuals. It seems to me that there is already existing recourse at law in case there is any question of any person misrepresenting or fraudulently representing himself as voicing the opinions of this House where a damage to the Society can be shown. In other words, that remedy already exists at law by statute.

Since the time that this came up last year, in searching the decisions which had been made in this state on certain questions brought up concerning analogous resolutions and attempts to regulate the speaking of individual members of organizations, I have found in the Annotated Laws of New York the case of *Gallaher vs. American Legion*, which arose in 1934, and is reported in 154 Misc. 281, 277 N. Y. S. 81, and affirmed in 1934 in 242 App. Div. 604, 271 N. Y. S. 1012. In that opinion it said:

"A regulation of the American Legion that a subordinate post or organization must not give to the public press nor forward to any public official any resolution or protest concerning the position of the national organization on any subject is unreasonable and unlawful since the organization is not a secret one and the regulation is opposed to the spirit if not the letter of the State and Federal Constitutions."

If it is opposed to the spirit of the State and Federal Constitutions, I think that the end which is attempted to be attained in the amendment here falls sufficiently within this classification so that this decision as to its unconstitutionality would apply if this amendment were passed, and I will maintain my opposition to it on the basis that it is probably unconstitutional and that it covers, insofar as misrepresentation by individuals or organizations is concerned, a situation which is already covered by statute.

SPEAKER FLYNN Is there any further discussion?

DR. HARRY E. BELLER, *Kings* Mr. Speaker, we of the County Society of Kings took action, comparable to the New York County Society, as opposed to this amendment.

We felt not alone that it was a gag rule, but that it exhibited the inconsistency which is apparent even in some of the procedures we adopted here today as, for instance, on the question of medical expense indemnity insurance, where we enunciated the principle that no plan should be accepted unless it were accepted by the county society. We have consistently argued that local

empowered to modify or add any provisions to this bill that they may find necessary "

After long and careful consideration the Committee is unanimous in its opinion that this resolution be not adopted, and I so move

The motion was seconded

DR CHARLES GULLO, *Livingston* Is it permissible to change that?

SPEAKER FLYNN Yes, you can amend the Committee's report if you want to

DR GULLO Will you read that report again please?

DR MOORE After long and careful consideration the Committee is unanimous in its opinion that this resolution be not adopted

DR GULLO I wish to make an amendment to the Committee's report.

SPEAKER FLYNN You are making an amendment to their report?

DR GULLO Yes, to the report of the Committee.

SPEAKER FLYNN Proceed with your amendment.

DR GULLO That the House of Delegates recommends that a bill be introduced in the New York State House of Legislation to be known as the Basic Science Law, and which shall provide that anyone professing to practice the healing art shall, beside any other qualifications established by the Legislature, pass an examination in the basic sciences, namely, anatomy, physiology, pathology, chemistry, and bacteriology, and such licenses granted to other than physicians and dentists to be designated as "limited licenses "

Such licenses must plainly state on their face the system or branch of medicine or surgery, or method of treatment of disease for the practice of which it is issued. No such license shall authorize the holder thereof to practice any system or branch of medicine or surgery, or method of treatment of disease other than that stated in the certificate thereof, nor shall it authorize the holder thereof to prescribe any drug to do or perform any surgical operation requiring cutting, or to prescribe or use any anesthetic

Such a licentiate must report communicable diseases in like manner and with like effect as though he were the holder of a license to practice medicine and surgery

SPEAKER FLYNN Point of order, this is a new bill.

DR GULLO Yes

SPEAKER FLYNN I am going to refer it to the same committee under New Business B

DR. ROBERT BRITAIN, *Delaware* He has not been talking to the motion at all

SPEAKER FLYNN Dr Gullo came up and offered it as an amendment to the Reference Committee's report.

DR. ALEC N THOMSON, *Kings* Was the amendment seconded?

SPEAKER FLYNN No Therefore it is out of order

DR THOMSON Yes

DR. WALTER D LUDLUM It is out of order, but I think if the House is willing to accept your ruling that would simplify it, even though it is an irregularity. If the House wishes to, it can accept your ruling that this is new business to be referred to a reference committee, and then it can vote on the motion that is before it of this Reference Committee

DR. THOMSON There is a motion before the House.

SPEAKER FLYNN Yes, the motion before the House is on the adoption of the original report of your Reference Committee.

CHORUS Right!

The question was called, and the motion was put to a vote, and was carried

DR. GULLO Will that resolution that I just introduced be referred to the Reference Committee B now?

SPEAKER FLYNN If you want to bring it up now as a new resolution. You brought it up as an amendment before.

DR GULLO What did you vote on just now?

SPEAKER FLYNN The report of the Reference Committee on your other resolution that was introduced this morning or this afternoon.

DR. GULLO What are you going to do about this one?

SPEAKER FLYNN If you want to introduce it as a new resolution, it will be referred to the Reference Committee on New Business B as a new resolution coming from you

DR GULLO Yes, I do

SPEAKER FLYNN Very well, it will take that course, and will be referred to that Committee

69 Report of Reference Committee on New Business C on Holding Annual Meetings Permanently in New York

SECTION 26

DR JOHN J MASTERSON This is the resolution introduced by the delegates from Chautauque County

"1 WHEREAS, the annual meetings of the Medical Society of the State of New York are better attended in New York City than elsewhere, and

"2 WHEREAS, this is the only city where the receipts pay the expenses of the meeting, and

"3 WHEREAS, the facilities for conducting the meeting are superior to those offered by any other city, and

"4 WHEREAS, the permanent records of the Society are in New York and immediately available,

"Be It Resolved, that New York City be designated as the location for the annual meeting of the Society every year "

The Reference Committee agrees with the statement in the resolution about the session being better attended and having superior facilities in New York City, but feels that if the meeting was held permanently in New York City, many of the physicians upstate would gradually lose interest in the State Society's annual meeting. We feel that to have the annual meeting in the various parts of the state as in the past will be of more value to the members of the Society and to the Society as a whole than having the annual session held every year in New York City

We move the resolution be not approved

The motion was seconded, and as there was no discussion, it was put to a vote, and was unanimously carried

70 Report on Reference Committee on New Business C on Medical Relief—Proposed Legislation

SECTION 34

DR JOHN J MASTERSON This resolution was

committee to study the enforcement of the Medical Practice Act, the personnel employed, procedures used, results obtained and possible improvements in enforcement, and be it further

"Resolved, that the State Education Department be requested to publish an annual report on this subject for the information of the physicians of the state "

The Committee feels that the members of the State Society would welcome information concerning the enforcement of the Medical Practice Act, and therefore moves the adoption of this resolution.

The motion was seconded, and as there was no discussion, it was put to a vote, and was unanimously carried

67 Report of Reference Committee on New Business B on Social Security Law—Provision for Physicians

SECTION 56

This resolution was presented by Dr Kimball, of the Medical Society of the County of New York

"WHEREAS, the practicing physician approaches old age with a declining capacity to earn an adequate income, and

"WHEREAS, the physician during his many years of activity does much work for the community without any remuneration, and

"WHEREAS, the policy of the Federal Government is having a strong trend to furnish security in old age, and

"WHEREAS, the Government's Social Security Program does not include provision for the physician's old age, therefore be it

"Resolved, that we instruct our delegates to the American Medical Association to introduce suitable resolutions to have the A. M. A. induce the Federal Government to extend the scope of the security laws to make special provisions for the security of the physicians in their old age."

The Committee is of the opinion that our Delegates to the American Medical Association should not be instructed on a matter of class legislation, and therefore move this resolution be not adopted

The motion was seconded, and as there was no discussion, it was put to a vote, and was unanimously carried

68 Report of Reference Committee on New Business B on Basic Science Law

SECTIONS 31, 77

DR MOORE This is a long, intricate resolution introduced by Dr Gullo, of the Medical Society of the County of Livingston, and reading

"WHEREAS, the State of New York has no law regulating the practice of the healing art, except as to the practice of medicine and dentistry, and

"WHEREAS, the healing art should be practiced by men and women who are properly qualified to do so, and

"WHEREAS, the healing art requires a thorough knowledge of physiology, chemistry, pathology, bacteriology and anatomy, be it

"Resolved, that the House of Delegates of the New York State Medical Society approve that

its President have introduced to the State Legislature, at its next regular session, a bill to be known as the BASIC SCIENCE LAW, and which shall read as follows

"Title and Organization of Examining Board

Board of Examiners in the Basic Sciences consisting of five members learned in the basic sciences appointed by the Governor from the faculties of the universities and colleges of New York State having four-year college courses Not more than two members may be appointed from any one school. Terms of appointment are four years, staggered

"Preliminary Qualifications Required of Applicants

- 1 Age 21
- 2 Good moral character
- 3 High School education or equivalent
- 4 Citizenship

"Basic Sciences in Which Applicants Are Examined

Anatomy, Physiology, Chemistry, Pathology, Bacteriology

"Examinations Time, Place, Fee Grade

Time and Place Discretionary with Board

Two examinations a year

Fee \$25

Grade 75 per cent in each subject. If less in one, re-examination in that subject.

If less in two or more, no re-examination unless proof is submitted, satisfactory to the Board, of additional study in the basic sciences

"Reciprocity Arrangements

Examination may be waived if applicant has passed an examination in the basic sciences in another state before a Board of Examiners in the basic sciences, if (1) the requirements of that state are not less than those in New York State for the issuance of basic science certificate and (2) if that state grants exemption to certificants of New York State Board of Examiners in the Basic Sciences

Fee \$25

"Act does not apply to

(1) Christian scientists, dentists, pharmacists, nurses, optometrists, chiropractors, dental hygienists, hydrotherapists, barbers, and cosmetologists, practicing within the limits of their respective callings,

(2) Commissioned surgeons of the United States army, navy, marine or public health service, in the usual performance of their duties,

(3) Regularly licensed physicians or surgeons from outside of State in actual consultation with licensed physicians of New York State,

(4) Persons giving baths, Swedish movements and exercises,

(5) Retail dealers fitting and recommending arch supports or orthopedic shoes,

Persons licensed to practice the healing art in New York State at the time the Act becomes effective

"and be it further

"Resolved, that the President and the Council of the New York State Medical Society be

Are there any other reference committees to report?

(There was no response.)

SPEAKER FLYNN Are there any resolutions?

(There was no response.)

SPEAKER FLYNN We will recess then until tomorrow morning at nine o'clock, when we will meet in this room

CHORUS Nine o'clock? Make it ten!

SPEAKER FLYNN Nine o'clock is the time.

The session recessed at 10 10 P.M.

Morning Session

Tuesday, May 7, 1940

The session convened at 9 30 A.M.

SPEAKER FLYNN The House will be in order
I am going to call on Dr Podvin, who has an announcement he would like to make

74 Tribute to Dr Robert Brittain

SECTIONS 75 89

ASSISTANT SECRETARY PODVIN Mr Speaker and Members of the House, the announcement I have to make is a bit unusual, but I take it as a privilege and a pleasure to announce that one of our delegates, Dr Robert Brittain, of Downs-ville, Delaware County, has been for forty consecutive years an elective member of this House. My attention was called to that a day or two ago in that he is being honored in his own county by a dinner in recognition of his many years of service, and I thought it would be proper and fitting that this House also recognize Dr Brittain's long and great service to this Society

I, therefore, move you, Mr Speaker, that we give Dr Brittain a rising vote in token of our appreciation of his fine career in this House

The audience arose and applauded

SPEAKER FLYNN Dr Brittain, would you kindly come to the front?

VOICE Dr Brittain just stepped out about three minutes ago (Laughter)

SPEAKER FLYNN Dr Irving has an announcement to make.

SECRETARY IRVING This afternoon at two o'clock in the Lounge Restaurant the Chairmen of the Compensation Boards of the County Societies will have a conference on the subject of Workmen's Compensation

At 3 30 P.M. the Council will meet in the Pillement Suite.

Right after that somewhere around four o'clock the Board of Trustees will meet also in the Pillement Suite

SPEAKER FLYNN Are there any other delegates here from other state medical societies, Vermont, New Jersey, and Connecticut? If they are, will they kindly arise?

There was no response.

75 Elections

SPEAKER FLYNN The first business on the second day of the meeting is the election of officers I will ask the Assistant Secretary to call the roll

ROLL CALL

The Assistant Secretary called the roll and the following responded

COUNTY SOCIETY DELEGATES

<i>Albany</i>	<i>Madison</i>
Stanley E. Alderson	Ernest Freshman
William B. Cornell	<i>Monroe</i>
Raymond F. Kircher	Clarence V. Costello
<i>Allegany</i>	William A. MacVay
Lyman C. Lewis	J. P. Henry
<i>Bronx</i>	Leo F. Sampson
J. Lewis Amster	Warren Wooden
Edward R. Cumfiffe	<i>Montgomery</i>
Louis A. Friedman	Horace M. Hicks
Samuel Epstein	<i>Nassau</i>
William Klein	David E. Overton
Emil Koffler	Louis A. van Kleeck
Moses H. Krakow	<i>New York</i>
Solomon Krell	Walter P. Anderton
<i>Broome</i>	William L. Wheeler Jr.
Samuel M. Allerton	Emily D. Barringer
Charles L. Pope	Edward K. Barsky
<i>Cattaraugus</i>	Samuel B. Burk
Leo E. Reimann	Albert A. Cinelli
<i>Cayuga</i>	Vincenzo Fanoni
Harry S. Bull	Harold B. Davidson
<i>Chautauqua</i>	J. A. Clinton Gray
Edgar Breber	B. Wallace Hamilton
De Forest W. Buckmaster	Alfred M. Hellman
<i>Chemung</i>	Benjamin Jablons
Elliot T. Bush	David J. Kaliski
<i>Chenango</i>	Samuel M. Kaufman
J. Mott Crumb	J. Stanley Kenney
<i>Clinton</i>	Moses Keschner
Leo F. Schiff	Francis N. Kimball
<i>Columbia</i>	Samuel J. Kopetzky
John L. Edwards	W. Bayard Long
<i>Cortland</i>	Walter D. Ludlum Jr.
Daniel R. Reilly	John A. Kelly
<i>Delaware</i>	Peter M. Murray
Robert Brittain	Nathan Ratnoff
<i>Dutchess</i>	<i>Niagara</i>
S. E. Appel	Harley U. Cramer
Aaron Sobel	Guy S. Philbrick
<i>Eric</i>	<i>Oneida</i>
John T. Donovan	William Hale
Albert A. Gartner	John F. Kelley
Harry C. Guess	Andrew Sloan
Harvey P. Hoffman	<i>Onondaga</i>
Thurber L. Win	Leon E. Sutton
Alfred H. Noehren	William W. Street
Herbert E. Wells	Albert G. Swift
Carlton E. Wertz	<i>Ontario</i>
<i>Essex</i>	Melville D. Dickanson Jr.
Harold J. Harris	<i>Orange</i>
<i>Franklin</i>	Morris R. Bradner
Charles C. Tremblay	Moses A. Stivers
<i>Genesee</i>	<i>Orleans</i>
Peter J. DiNatale	Ralph E. Brodie
<i>Greene</i>	<i>Oswego</i>
Kenneth F. Bott	Kent W. Jarvis
<i>Herkimer</i>	<i>Otsego</i>
George A. Burgin	Floyd J. Atwell
<i>Jefferson</i>	<i>Putnam</i>
Charles A. Prudhon	Henry W. Miller
<i>Kings</i>	<i>Queens</i>
Robert F. R. Andresen	James M. Dobbins
Robert F. Barber	Chester L. Davidson
Harry E. Beller	W. Guernsey Frey Jr.
Benjamin M. Bernstein	H. P. Mencken
E. Jefferson Browder	Thomas M. d'Angelo
Walter A. Coakley	Joseph Wrana
William S. Collins	<i>Rensselaer</i>
John B. D'Albora	John D. Carroll
Maurice J. Dattelbaum	Stephen H. Curtis
Harry Feldman	<i>Richmond</i>
Charles F. McCarty	Arthur S. Driscoll
Edwin A. Griffin	Stanley C. Pettit
Walter D. Ludlum	<i>Rockland</i>
John J. Masterson	Stephen R. Monteth
Harvey B. Matthews	<i>St. Lawrence</i>
Thomas A. McGoldrick	W. Grant Cooper
William C. Meagher	Walter H. Mulholland
Philip I. Nash	<i>Saratoga</i>
J. Sturdivant Read	G. Scott Towne
Robert M. Rogers	<i>Schenectady</i>
Irwin E. Sims	F. Leslie Sullivan
Alec N. Thomson	Joseph H. Cornell
Thomas B. Wood	<i>Schoharie</i>
<i>Livingston</i>	David W. Beard
Charles Gullo	<i>Schuyler</i>
	Joseph Y. Roberts

introduced by Dr Edward C Podvin, of the Medical Society of the County of Bronx

"WHEREAS, there are groups of people in our State who by reason of extreme indigency cannot come within the provision of any form of health insurance (compulsory or voluntary) and therefore constitute a burden upon the medical profession, be it

"Resolved, that the State Society Legislative Committee be instructed to prepare and introduce appropriate legislation for an adequate health plan to care for this group, and be it further

"Resolved, that this legislation include provision for remunerating the participating doctors "

A resolution was passed today by the House of Delegates to make a study of the matter contained in this resolution and your Reference Committee recommends that the House of Delegates postpone any action on this resolution until its Committee, to be appointed, makes its report.

I so move.

The motion was seconded, and as there was no discussion, it was put to a vote, and was unanimously carried

71 Report of Reference Committee on New Business C on Compulsory Health Insurance for People Below \$1,500 Income Level

SECTION 33

DR JOHN J MASTERON This is another resolution introduced by Dr Podvin

"WHEREAS, many residents of our State are unable to obtain proper medical care because of financial inability to compensate therefore, be it

"Resolved, that the New York State Medical Society go on record as favoring the principle of compulsory health insurance for people whose annual income is below the \$1,500 income level "

The State Legislature created a committee to study a long range health program for the citizens of our State. They have been studying this matter for the past two years, and your Reference Committee recommends that the House of Delegates postpone any action on this resolution until the Legislative Committee makes its report at the next session of the Legislature.

I so move.

The motion was seconded

DR ARTHUR J BEDELL, *Albany* I ask, sir, that that last sentence—just the last sentence—be reread

DR. MASTERON "They have been studying this matter for the past two years, and your Reference Committee recommends that the House of Delegates postpone any action on this resolution until the Legislative Committee makes its report at the next session of the Legislature "

DR BEDELL I question, Mr Speaker, if that is the intent. If I listened correctly, it says that we will have that after the State Legislature reports. Is that the intent, or is it to be brought up to our House of Delegates?

DR. MASTERON Well, the resolution is that we go on record as favoring the principle of compulsory health insurance, and that being a very controversial subject we thought until we found out how the Legislature feels about it, it would be inappropriate for us to take any action at this time

DR. BEDELL Will you entertain an amendment to that?

SPEAKER FLYNN Yes

DR BEDELL I move you, sir, that this House of Delegates reaffirms its former position that we are absolutely opposed to any form of compulsory health insurance

DR. CHAS GORDON HEYD, *New York* I second that amendment.

There being no discussion, the amendment was put to a vote, and was carried

SPEAKER FLYNN Now we will have the motion, as amended, come before us

The question was called for, and the motion as amended was put to a vote, and was carried

72 Report of Reference Committee on New Business C on Regional and General Anesthesia Section

SECTION 57

DR JOHN J MASTERON This was introduced by Dr J Lewis Amster, of the Medical Society of the County of Bronx

"WHEREAS, the art and science of anesthesiology (regional and general anesthesia in all its forms and all that pertains to it, including resuscitation and inhalation therapy) has made rapid progress in the past fifteen years, and

"WHEREAS, there are now more than 400 anesthesiologists and surgeons members of the Medical Society of the State of New York who are limiting their practice to anesthesia or specializing in the field of regional anesthesia, and

"WHEREAS, in a number of states there have been established sections on regional and general anesthesia or anesthesiology in their respective state medical societies, and

"WHEREAS, this specialty has been recognized by the American College of Surgeons, the American Hospital Association, the Advisory Board for Medical Specialties, and by the Council of Education and Hospitals of the American Medical Association by having approved the establishment of the American Board of Anesthesiology, and

"WHEREAS, for the past several years there has been a regular Session on Regional and General Anesthesia in the Medical Society of the State of New York, now therefore be it

"Resolved that a regular Section in this specialty be established "

Reference Committee C approves of this resolution, and moves its adoption

The motion was seconded, and as there was no discussion, it was put to a vote, and was unanimously carried

73 Amendment—House of Delegates Resolutions on Last Day

DR ARTHUR J BEDELL, *Albany* I would like to give notice of an amendment to the Constitution to be acted on by the next House of Delegates. It is to add a new Section to Chapter II of the Constitution to the effect that no new resolution may be presented on the last day of session of the House of Delegates without a two-thirds affirmative vote. This is a notice that I make for action next year

SPEAKER FLYNN That involving a change in the Bylaws it will lay over until next year

K. Preston, Syracuse, Charles R. L. Putnam, New York City, Emil Rauth, Brooklyn, Adolph G. Rave, Hicksville, Willard F. Read, Hamilton, John T. W. Rowe, New York City, Chalmers Sangree, New York City, Charles A. Schladermundt, Buffalo, Edwin M. Schultz, Middletown, Henry A. Shaw, New York City, John C. Shoudy, Syracuse, Warren S. Simmons, Brooklyn, Percy C. Snowden, Peekskill, Pehr Stigner, New York City, Edward C. Titus, New York City, Charles A. Van der Beek, Rochester, James J. Walsh, New York City, Martin W. Ware, New York City, Charlotte C. West, New York City, Frank E. West, Brooklyn, Alfred Weiner, New York City.

The motion was seconded, and as there was no discussion, it was put to a vote, and unanimously carried.

77. Report of Reference Committee on New Business B on Basic Science Bill

SECTION 68

DR. NORMAN S. MOORE. This is on the second resolution introduced by Dr. Gullo, of Livingston County. As you may remember, this resolution was introduced as an amendment. It was not accepted as an amendment and went in as new business. It is not in the form of a resolution, and is as follows:

"That the House of Delegates recommends that a bill be introduced in the New York State House of Legislation to be known as the Basic Science Law and which shall provide that anyone professing to practice the healing art shall, beside any other qualifications established by the Legislature, pass an examination in the basic sciences, namely, anatomy, physiology, pathology, chemistry and bacteriology, and such licenses granted to others than physicians and dentists are to be designated as limited licenses.

"Such licenses must plainly state on their face the system or branch of medicine or surgery, or method of treatment of disease for the practice of which it is issued. No such license shall authorize the holder thereof to practice any system or branch of medicine or surgery, or method of treatment of disease other than that stated in the certificate thereof, nor shall it authorize the holder thereof to prescribe any drug, to do or perform any surgical operation requiring cutting, or to prescribe or use any anesthetic.

"Such a licensee must report communicable diseases in like manner and with like effect as though he were the holder of a license to practice medicine and surgery."

It is the opinion of the Committee, after careful consideration that this resolution be not adopted, and I so move.

The motion was seconded.

DR. CHARLES GULLO, *Livingston*. After speaking to various members of the House of Delegates it seems that the essence of this resolution is not quite understood. The essence of this resolution would require that all those practicing the healing art (not mentioning who we are) pass an examination in the basic sciences of anatomy, physiology, pathology, chemistry, and bacteriology. It does not specifically mention the chiropractor, the naturopath, or those practicing the various cults that you and I, and I dare say every citizen of the State of New York, if you

knew the truth would want regulated properly. When I say "properly" I mean by law and not the way they wish to be regulated.

The necessity for this is evidenced by the fact that every single year in Albany these people are trying to have their privileges and powers broadened. As an instance of that take the osteopaths. They finally succeeded in having their bill passed, yet we said twenty years ago and ten years ago that the osteopaths would never succeed in passing their bill.

The Basic Science Law would require that every person wishing to practice the healing art pass an examination given, of course, under the supervision of the Regents, this examination to include anatomy, physiology, pathology, chemistry, and bacteriology. That examination would be the same examination that all physicians and dentists today, and I believe the osteopaths too, are required to take. It is not a radical or unreasonable demand to ask anyone who wishes to treat the sick that he prove to the public that he knows what the human body is composed of, how it functions, and the pathology that follows disease.

We are not saying if we adopt this resolution that there will not exist thereafter such persons as chiropractors and naturopaths. As we all know they are frauds, but does the public know that? We, as a group, are but a small portion of the public, and I think the public looks upon us as a representative body of the medical profession and believe it is up to us to guide legislation which will safeguard their interests. By adopting such a law, the public will know that these frauds are not qualified to pass even basic science examinations. It will put them on notice, as it were.

Furthermore, unless this originates from us, some day it will originate from the chiropractors and the naturopaths, but they will sponsor a law that they like, much weaker than this, establishing their own qualifications, and after they pass such a law try to get them out. We know that once that will be done, it will be almost a physical impossibility to get them out.

On September 23, 1939, after a meeting of our House of Delegates, I wrote to the American Medical Association requesting information on the Basic Science Law, and the results obtained therefrom where it was adopted.

Of course, the Basic Science Law would not function if the law were so enacted as to include a separate board for your chiropractor, and a separate examining board for your naturopath, and a separate examining board for your osteopath, and a separate examining board for your doctor. The Basic Science Law ignores all medical dogmas and cults.

I am reading now from a report sent to me by the Bureau of Legal Medicine and Legislation of the American Medical Association: "A basic science law ignores all medical dogmas and cults. It establishes an impartial, nonsectarian board of examiners, in the basic sciences named above, and requires that each person who desires to obtain a license to treat human beings, as a first step toward obtaining that license, appear before that board and demonstrate his proficiency in anatomy, physiology, pathology, chemistry, and bacteriology."

SPEAKER BAUER. Please expedite it.

DR. GULLO. I think this is so important to the

<i>Seneca</i>	<i>Warren</i>
Arthur F Baldwin	Morris Maslon
<i>Sleuben</i>	<i>Washington</i>
William J Tracy	Denver M. Vickers
Herbert B Smith	<i>Wayne</i>
<i>Suffolk</i>	Ralph Sheldon
Coburn A. L Campbell	<i>Westchester</i>
John L Sengstack	George C. Adie
<i>Sullivan</i>	Arthur F Heyl
Irving Greenberg	Merwin E. Marsland
<i>Tioga</i>	Laurance D Redway
William A. Moulton	E Christopher Wood
<i>Tompkins</i>	<i>Wyoming</i>
Norman S Moore	Henry S Martin
<i>Ulster</i>	<i>Yates</i>
Frederic W Holcomb	Bernard S Strait

DISTRICT DELEGATES

Theodore West	Reeve B Howland
Louis H. Baner	Alfred W Armstrong

OFFICERS

Terry M. Townsend	George W. Kosmak
Aaron Sobel	Kirby Dwight
Peter Irving	James M. Flynn
Edward C. Podvin	Louis H. Baner

TRUSTEES

Harry R. Trick	William H. Ross
George W. Cottis	Thomas M. Brennan

COUNCILORS

Herbert H. Bauckus	Clarence G. Bandler
Augustus J. Hambrook	John L. Bauer
Harry Arano	Edward T. Wentworth
Guy S. Carpenter	Oliver W. H. Mitchell

EX-PRESIDENTS

Thomas H. Halsted	William D. Johnson
Grant C. Madill	Chas. Gordon Heyd
J. Richard Kevin	Arthur J. Bedell
Nathan B. Van Bitten	Frederic E. Sondern
Harry R. Trick	Floyd S. Winslow
William H. Ross	William A. Groat

SPEAKER FLYNN There being a quorum present, we will now proceed with the election

TELLERS

SPEAKER FLYNN I will now appoint the following as tellers Dr Leo F Simpson, of Monroe, *Chairman*, Dr John T Donovan, of Erie, Dr Bernard S Strait, of Yates, Dr Ralph Sheldon, of Wayne, and Dr Philip I Nash, of Kings

VICE-SPEAKER BAUER Before we proceed, I understand Dr Brittain is now in the House Dr Brittain, unfortunately you were out of the room a moment ago when the House stood and applauded you for your long service to organized medicine, so I think it would be very fitting for you to stand at this time so we can applaud you when you are present.

The delegates arose and applauded

VICE-SPEAKER BAUER Gentlemen, the situation is a little unusual this year in that the President-elect of the Society, Dr James H Borrell, passed away last fall, so that this year the House of Delegates has to elect two presidents, one to take office immediately and the other a president-elect who will take office a year from now. In order to avoid confusion, the Chair will designate the officer who is to take office immediately as President and the other by the usual term of President-elect.

ELECTION OF OFFICERS, TRUSTEE, AND COUNCILORS

The following officers were elected *President*, James M. Flynn, Rochester, *President-elect* and *First Vice-President*, Samuel J. Kopetzky, New York City, *Second Vice-President*, Albert A.

Gartner, Buffalo, *Secretary*, Peter Irving, New York City, *Assistant Secretary*, Edward C. Podvin, Bronx, *Treasurer*, George W. Kosmak, New York City, *Assistant Treasurer*, Kirby Dwight, New York City, *Speaker*, Louis H. Bauer, Hempstead, *Vice-Speaker*, William Hale, Utica

The following *Trustee* was elected for a five-year term terminating 1945 Thomas M. Brennan, Brooklyn

The following *Councilors* were elected for a three-year term terminating 1943 Herbert H. Bauckus, Buffalo, Augustus J. Hambrook, Troy, E. Christopher Wood, White Plains

A.M.A. DELEGATES

The following were elected for 1941-1942 Thomas M. Brennan, Brooklyn, Edward R. Cunniffe, Bronx, Terry M. Townsend, New York City, Edward C. Podvin, Bronx, Floyd S. Winslow, Rochester, William D. Johnson, Batavia, Harry C. Guess, Buffalo, Emily D. Barringer, New York City, William A. Groat, Syracuse, James R. Reuling, Jr., Bayside

The following were elected alternates for 1941-1942 Clarence G. Bandler, New York City, Robert F. Barber, Brooklyn, B. Wallace Hamilton, New York City, Walter P. Anderton, New York City, Andrew Sloan, Utica, Grant C. Madill, Ogdensburg, Frederic C. Conway, Albany, Louis A. Van Kleeck, Manhasset, F. Leslie Sullivan, Scotia, John D. Carroll, Troy

76 Election of Retired Members

SECRETARY IRVING I move that these members be elected to retired membership Charles F. Adams, New York City, Emil C. Bernauer, Brooklyn, Selma Bloom, New York City, William C. Braslin, Brooklyn, George S. Britten, Destin, Fla., George L. Brodhead, New York City, Fanny Hurd Brown, Castile, Thomas J. Burke, Newburgh, Chester T. Cadwell, Poughkeepsie, J. Willis Candee, Utica, John C. Cardwell, Brooklyn, Eugene H. Carpenter, Oneida, William J. Carr, Newburgh, Francesco Cella, Bronx, W. F. Cunningham, New York City, Charles E. Davis, Honolulu, Lavina R. Davis, Oneida, John W. Dean, Glens Falls, Charles H. De Lancey, Brooklyn, Joseph W. Droogan, Bronx, Matthew H. DuBois, Washingtonville, Robert M. Elliott, Canandaigua, Abraham J. Epstein, Bronx, J. William Feldman, New York City, Lewis Fitz Simmons, Pulteney, Moosha B. Freid, Bronx, Edward L. Frost, Buffalo, Samuel G. Gant, New York City, Joseph H. Gettinger, New York City, Homer J. Grant, Buffalo, Friedrich K. W. Grosse, Port Jervis, James T. Gwathmey, New York City, Frederick A. Hayes, Buffalo, Henry B. Henson, Beverly Hills, Cal., John Freeman Humphrey, Saratoga Springs, Sergius M. Ingerman, New York City, J. Herbert Irish, Syracuse, Frank N. Irwin, White Plains, Edward L. Keyes, New York City, Carl Koller, New York City, Moses Krakowski, Bronx, Max A. Lipkind, Bronx, Henry C. Lovis, South Orange, N. J., Francis J. Magilligan, Brooklyn, Mark Manley, Gulf Hammock, Fla., George Mannheim, New York City, David M. Marvin, New York City, Frederic J. McCammon, Brooklyn, Sylvester J. McNamara, Brooklyn, George F. Mills, Oneida, Henry M. Mills, Brooklyn, Katherine S. Munhall, Buffalo, Victor C. Pedersen, New York City, Margaret

are inclined to think we can stop any legislation we please by pressure upon the Legislature. That is ridiculous. The chiropractors and the osteopaths have a thousand to our one. They have to have because we have the truth behind us, and we feel we do not need any lies to back us, they are frauds, and they have to have a big lobby. Of course anybody with sense knows that. So I say unless we can put teeth into a law which will operate we cannot accomplish anything.

Now I was going to say—

VICE-SPEAKER BAUER The discussion is on the motion to refer to the Council and not on the merits of the resolution.

DR. GULLO That's right.

VICE-SPEAKER BAUER Please confine your remarks to that.

DR. GULLO I will. The public, it seems to me, feel that we have a persecution complex and must persecute these chiropractors, and so they come out in five minutes and say "Not guilty." That is about the only way you can interpret the reaction of an intelligent jury in five minutes' time who reach that verdict.

If this motion could be decided at this session of the House, I think it would be a wise thing to do, and the thing that we down in our hearts, every one of us, would like to see happen would follow, and that is the stamping out of all these various cults.

The question was called for, and was put to an "aye" and "nay" vote, as the Chair was in doubt it was put to a rising vote, and was carried.

VICE-SPEAKER BAUER It is referred to the Council.

78 Report of Committee on Prize Essay Awards

DR. EUGENE H. POOL, *New York* As Chairman of the Committee on Prize Essays, I wish to report as follows:

For the *Lucien Howe Prize*, which is a prize of \$100 for the best original essay on some branch of surgery, preferably ophthalmology, we recommend that the prize be given for the essay entitled "Acute Retrobulbar Neuritis as a Manifestation of Acute Localized Tissue Anoxia." The paper has been carefully studied. The essay is written in lucid English, with a careful choice of words and good style. There is evidence of much painstaking work and, what is rarer, of clear and consecutive thinking. The conclusions seem inevitable and are convincing. The bibliography is large, and we think complete. We do not know who the author is yet. The identity is "Insta Opportune Importune," which the Secretary will translate for you. (Laughter)

SECRETARY IRVING This is a sealed envelope, which I will open.

CHORUS Translate it! (Laughter)

SECRETARY IRVING The name herein is Walter F. Duggan, 258 Genesee Street, Utica, New York. (Applause)

DR. POOL We have shown no geographical prejudices. (Laughter)

The next is the *Merrill H. Cash Prize* of \$100 to be given to the author of the best original essay on some medical or surgical subject. This essay

Arsenic as a Possible Cause of Subacute Encephalomyelitis—a Correlation of Chemical, Clinical and Histological Observations," has been

deemed deserving of one of these prizes. It is original, well prepared, presented carefully and thoroughly, with good illustrations. The earmark here is, "Where Angels Fear to Tread."

SECRETARY IRVING This is sealed until now, and therein is the name Arthur D. Ecker, 603 East Genesee Street, Syracuse, New York. (Applause)

DR. POOL May I make one suggestion about this?

SECRETARY IRVING Certainly! We would be glad to have it.

DR. POOL In the future I think there should be considerably more time for the Committee to review these essays. It is extremely difficult, almost impossible, to study properly twenty-odd essays in a month. There should be at least two months. You have to take these very technical articles to one or more specialists and get them back, and go over them with them, and get the discussion. It is a very difficult job. Moreover, I feel very strongly that the members of the Committee should all be in one place. For instance, my colleagues were both upstate men, and we never have gotten together, and it threw the whole responsibility and work on one man. It is too serious a thing to do that.

SECRETARY IRVING Here are the bunch of essays (indicating a big stack).

VICE-SPEAKER BAUER The House thanks you, and congratulates the recipients of these well-deserved awards.

79 Report of Committee on Awards of Scientific Exhibits

DR. WILLIAM A. KRIEGER Your Committee on Awards of Scientific Exhibits, after careful examination and review, wish to report as follows:

From Clinical Standpoint

- 1 Arthur M. Masters, M.D.
with collaboration of
D. A. Grisham, M.D.
Simon Dark, M.D.
Harry L. Jaffe, M.D.
Mount Sinai Hospital, New York City

The Fluoroscopic Diagnosis of Coronary Occlusion

- 2 R. Franklin Carter, M.D.
J. Russell Twiss, M.D.
Carl H. Greene, M.D.
New York Post-Graduate Medical School and Hospital, New York City

Cause and Relief of Symptoms After Cholecystectomy

- 3 William A. Schonfeld, M.D.
Endocrine Clinic, Neurological Institute,
Columbia-Presbyterian Medical Center,
New York City

From Research Standpoint

- 1 Benjamin Jablons, M.D.
J. L. Miller, M.D.
C. L. Royster, M.D.
1st Medical Division City Hospital,
New York City

Effect of Physical Measures on Circulation in Peripheral Vascular Disease

- 2 Henry K. Taylor, M.D.
Welfare Hospital, New York City
Body Section Roentgenography

public and to us that it requires a lot of consideration, and I think if this were passed we would accomplish thereby that which we all would like to see happen.

The basic science laws have been effective in thirteen states. From 1927 to 1937, inclusive, 8,960 persons have been examined by the basic science examining boards of these thirteen states. Eight thousand one hundred and eighty-eight of the applicants examined, or approximately 92 per cent, were either medical students or doctors of medicine. Four hundred and forty-four, or approximately 6 per cent, were osteopaths, and 203, or approximately 3 per cent, were chiropractors. There were examined in addition a small group, approximately 125 persons, who are not classifiable in any of the three main groups just mentioned.

Now let us see the results of that law. Of the medical students and doctors of medicine, 92 per cent of the whole, 12 per cent failed, of the osteopaths, 6 per cent of the whole, 41 per cent failed, of the chiropractors, 3 per cent of the whole, 74 per cent failed. Those are the reports of the American Medical Association—not mine. In other words, here we have something that has teeth in it, and it is the sort of law that your osteopaths, your chiropractors, and every cult in the nation do not want to see enforced.

Just to let you know what Mr. B. J. Palmer thinks about it, the "daddy of all chiropractors," let me quote to you a statement that he made before a meeting of chiropractors in Philadelphia in 1928:

"Chiropractic is doomed. You have drifted so far from the basic principles of chiropractic that you have lost your identity and brought the basic science bill on our heads. Twenty-eight chiropractic schools have closed recently, and many others will follow. You cannot defeat the ends of science. The basic science bills are the buckshot which we deserve for trespassing. When chiropractors preach and practice and try to become physicians, then it is justifiable for the medical men to educate the chiropractor."

DR. HARRY ARANOW. Gentlemen, I will just take a minute. There is a great deal in what Dr. Gullo has said. Year after year, year after year, the chiropractor bill is introduced in Albany. Every now and then it has passed the House, and I think we had to have it saved one time by the Governor. There is a great deal of sense in that law, only it requires much study and consideration and concentration. I would move an amendment that this be referred to the Council for further study.

The motion was seconded.

VICE-SPEAKER BAUER. This is a motion to commit and not an amendment. I accept it as a motion to commit. It has been moved that the report of the Reference Committee be referred to the Council for appropriate action. Is there any further discussion?

DR. SAMUEL B. BURK, *New York*. Mr. Speaker and Gentlemen of the House, this question of committing or not committing to the Council is one that should be taken care of right on the floor this morning. This is a vital question. It is one that appertains to the practice of medicine and to the treatment of patients. There is only one standard that you can be guided by, and that is the standard that requires

every man to meet all requirements. No different kinds of cults, no naturopaths, no osteopaths, or any other kind of a "path" should be allowed to practice, or even report disease, or participate in anything connected with the practice of medicine. I believe that this matter should be settled here once and for all without any delay. I thank you.

DR. IRWIN E. SIRIS, *Kings*. Mr. Chairman and Members of the House of Delegates, I was on this Reference Committee when Dr. Gullo presented this resolution. We listened very sympathetically for almost two hours to the very same arguments that Dr. Gullo has presented to you this morning. Although we are in sympathy with his resolution, it is a very ambiguous resolution. For years the Medical Society has endeavored to raise the standards of education. This particular resolution presupposes that there are standards whereby the chiropractors and those practicing other cults after having passed examinations in these basic sciences will be able to carry on and practice their particular cult. This resolution, although its intention is good, is a very ambiguous one and requires considerable study. As it stands now I should like to move that the report of our Reference Committee be supported, namely, to reject the resolution.

VICE-SPEAKER BAUER. The motion is to refer the matter to the Council. That is the motion before the House right now. Is there any further discussion on that?

DR. GULLO. I agree with the speakers that it is an important question. It is very vital. If we will remember just one thing I believe it will help us. Consider the average lay person who sees the sign "Chiropractor" or "Naturopath" and then goes into the office and sees all the paraphernalia there that one would usually associate with a medical doctor's office, including an x-ray machine and what not, and you can understand how that fools him.

I am not blaming the Attorney-General for allowing them to have this equipment, for he can do nothing about it when he attempts to prosecute them for treating a patient with it. As Dr. Madill, who is on the Committee, explained to us, the Attorney-General would like to cooperate with us to stop these abuses. He told us of an instance where one of these chiropractors—of course this is an example that could be repeated a thousand times if we had the time—treated a patient with a fractured neck femur, a woman, and the Attorney-General thought to himself, "Here is where we have an airtight case," so he immediately got ready to prosecute the individual. They had the x-ray evidence that a fractured femur was suffered by the patient. In five minutes' time the jury reported not guilty.

What does it mean? To my mind it does seem that the public believes that the chiropractors already have a license of some sort to practice, which they don't have, but the public does not know that they have not such a license. As conditions exist now there is nothing to indicate to the public that these people are not qualified. When the medical profession with all its prestige protests—and the press says we have a terrific lobby in Albany, which you all know is not true, we only have Dr. Lawrence there (laughter), but we are said to have the biggest lobby in the State of New York at Albany, and if that is so, I am glad Dr. Lawrence is that good—the public

84. Remarks of Incoming Speaker, Dr Louis H. Bauer

DR LOUIS H BAUER Gentlemen of the House, these two gentlemen have put me in rather a spot Dr Kopetzky occupied this Chair for five years and was known as a remarkable parliamentarian. Dr Flynn has occupied it for the past two years with efficiency, and as I heard someone say yesterday, "He was a damned good umpire." (Laughter)

Now what is there left for me? I hope I will not be in the position of a noted Surgeon General of the Army, who when he first entered the service as a first lieutenant was taken out to learn to ride a horse. There was a grizzled sergeant placed in his charge to give him instruction. One day the horse started to bolt, and the sergeant called, "Stop him, Lieutenant, stop him" Whereupon the man who was later to be Surgeon General of the Army said, "Stop him yourself, Carney, I don't know where the hell I'm going" (Laughter)

Is there any new business to come before this meeting of the House?

85 Vote of Thanks to the Committee on Arrangements

DR. GEORGE W KOSMAK I think it is opportune that a vote of appreciation and thanks be extended by this House to the Committee of Arrangements, who have developed such an excellent meeting this year

VICE-SPEAKER BAUER I am sure that that is very much in order I will ask you to make it a rising vote.

(All the delegates arose and applauded)

86 Vote of Thanks to Dr Albert F R. Andresen, Dr William A. Krieger, and Dr A. L. Loomis Bell, and Their Committees

DR. WILLIAM A GROAT I think we should give our thanks to Dr Andresen, Chairman of the Committee on Scientific Work, Dr Kreiger on the Technical Exhibits, and Dr Bell on the Commercial Exhibits—our thanks and appreciation

(The motion was carried by the delegates arising and applauding)

87 Acknowledgment of Governor Lehman's Letter

SECTION 23

DR. AUGUSTUS J HAMBROOK Yesterday we heard read here a letter from His Excellency, Governor Lehman, a voluntary letter as I understand it, in appreciation of what the Medical Society means to the State of New York. I think this was an outstanding occasion, and we should take recognition of it and see to it that our Governor receives a suitable answer I, therefore, move that his letter be received with approval and that a letter be sent to the Governor showing our deep appreciation.

The motion was seconded, and as there was no discussion, it was put to a vote, and was unanimously carried

VICE-SPEAKER BAUER Is there any other business to come before the House?

(There was no response)

88 Acknowledgment by Dr Robert Brittain to Tribute Paid Him by the House

SECTIONS 74, 75

DR. ROBERT BRITTAIN Gentlemen of the House, as it happened I was at the telephone when I was given an opportunity to stand up before you so that you could see what I looked like, and to give you a description of myself, which is rather egotistical but which may amuse you, I will read a little poem written about me by a writer who used to write for the New York State JOURNAL The title is "Homely Doc Brittain." It can be taken as you see fit

One year ago, some time in March, if memory doesn't fail,

When I was tottering near the Shade, "Doc" Brittain crossed my trail

I'd formed a resolution—I suppose that it was Fate—

To rope and tie the Demon Rum before it was too late,

"If you are really going to quit," Bill Keener said to me,

"I'll send for Doctor Brittain—he's the man you want to see!"

Below that chapter of my life he helped me write The End

That's how I beat the Demon Rum and found a sterling friend

He isn't like a doctor when you take a look at him—

No "M.D." written on his chest in letters large and grim

His traits are not exactly what a deacon calls the best,

He drinks and chews tobacco, like the men I knew out West.

In what we call "Society" he'd be no shirung light

Because he'd never ask you if his necktie was on right,

His coat is seldom swallow-tail or dinner coat or frock,

The aristocracy of brains is class enough for "Doc"

I met a chap this morning, from over Downsville way,

Who says that Brittain's birthday comes upon St. Patrick's Day

St. Patrick drove the wriggling snakes from Ireland to the sea

And good old Doctor Brittain kept the snakes away from me

I do not know if Erin has improved much since the change

But I'm as gay as any colt that ever roamed the range,

So if I can't be with you when you make your birthday hum,

Good luck to you, "Doc" Brittain, now and in the years to come!

(Applause)

VICE-SPEAKER BAUER Thank you, Dr Brittain!

Has anyone any other business to bring before this House?

(There was no response)

VICE-SPEAKER BAUER The Chair wishes to express thanks to the Chairmen and the members

- 3 William G Exton, M D
Anton R Rose, Ph D
The Prudential Laboratory and Longevity Service, The Prudential Insurance Company, Newark, New Jersey

One Hour Renal Condition Test
(Applause)

80 Reconsideration of Report of Reference Committee on Report of the Council, Part IV
SECTION 32

DR. FLOYD WINSLOW It would appear that one paragraph of the Report of Council Committee—Part IV adopted by this House yesterday needs clarification. For the purpose of producing this clarification, I hereby move that the report of the Committee be reconsidered

The motion was seconded, and as there was no discussion, it was put to a vote, and was unanimously carried

VICE-SPEAKER BAUER The motion is now reconsidered, and it is before you for discussion

DR FLOYD WINSLOW In yesterday's report, the first paragraph under "B—Publication" read as follows

"The experience gained during the two years since the House of Delegates arranged the merger of the Public Relations Bureau and the Publication Department has convinced your Reference Committee that these departments should be kept separate "

We propose the addition of the following words

"as to budget and committees in charge of supervision, but this shall not prevent any employee from performing duties assigned to him in both these parts of the Society's work "

If adopted, this paragraph will read
"The experience gained during the two years since the House of Delegates arranged the merger of the *Public Relations Bureau* and the Publication Department has convinced your reference committee that these departments should be kept separate as to *budget and committees* in charge of supervision, but this shall not prevent any employee from performing duties assigned to him in both these parts of the Society's work "

I recommend the adoption of this clarification, and so move

The motion was seconded, and as there was no discussion, it was put to a vote, and was unanimously carried

VICE-SPEAKER BAUER You have now before you the re adoption of the report as amended

DR WINSLOW I so move.

The motion was seconded, and as there was no discussion, it was put to a vote, and was unanimously carried

81 Report of Reference Committee on New Business A on Public Health Laboratories, and Laboratory Medicine Practiced by Laymen
SECTION 65

DR. EDWARD R. CUNIFFE This is on the second resolution introduced by Dr Chas Gordon Heyd in behalf of the Pathologic Laboratories, reading

"Be It Resolved That

"1 The House of Delegates go on record as disapproving laboratory medicine by laymen or nonmedical personnel,

"2 That measures for establishing a proper relationship between city and state departments of health laboratories and physicians who practice pathology be endorsed,

"3 That the work of state and city departments of health be limited to the diagnosis of communicable diseases except where the diagnostic facilities of state and city health departments are the only diagnostic means available for indigent patients "

This resolution has now been amended to the satisfaction of the Committee, and in its present form is approved We move that the report of the Committee be adopted

The motion was seconded, and as there was no discussion, it was put to a vote, and was unanimously carried

VICE-SPEAKER BAUER Are there any other committees ready to report?

(There was no response.)

VICE-SPEAKER BAUER Dr Winslow, will you consider yourself a committee of one to escort the new President, James M Flynn, to the platform

(The audience arose and applauded as Dr Winslow escorted Dr James M Flynn to the platform)

82 Remarks of Incoming President, Dr James M Flynn

DR. LOUIS H BAUER Dr Flynn, this platform is no new place to you. You have occupied it for most of the past two days, as well as on numerous other occasions It gives me great pleasure to be the first publicly to congratulate you on your well-deserved election as President of the Medical Society of the State of New York.
(Applause)

DR. JAMES M FLYNN I am glad of this opportunity to thank each and every member of this House of Delegates for the kind and courteous treatment you have seen fit to give me over the course of the years as Speaker of your House of Delegates

As to your action of this morning in electing me President of the Medical Society of the State of New York, all I can say is thanks a million
(Applause)

83 Remarks of Incoming President-elect, Dr Samuel J Kopetzky

VICE-SPEAKER BAUER Dr Anderton, will you be a committee of one to escort the new President-elect, Dr Kopetzky, to the platform

(The audience arose and applauded as Dr Anderton escorted Dr Samuel J Kopetzky to the platform)

VICE-SPEAKER BAUER This is another gentleman that this platform is no new place for as he presided here so gracefully for five years as Speaker of this House of Delegates I present to you your new President-elect, Dr Samuel J Kopetzky, with our congratulations (Applause)

DR. SAMUEL J KOPETZKY Gentlemen of the House, I would be less than human if I were not immensely gratified I approach whatever is in store with a feeling of humility and responsibility When I think of what has happened to me and its implications, I can only say God bless America!
(Applause)

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All committees having reported, there being no further business to come before this House of

Delegates, I declare the 134th Session of the House of Delegates of the Medical Society of the State of New York adjourned sine die.

(The session adjourned at 11 30 o'clock)

LABORATORY AIDS IN THE DIAGNOSIS AND TREATMENT OF THE LEUKEMIAS

A definite diagnosis of leukemia can be made only on examination of blood or tissue. Leukemias are of three types (1) myelogenous, (2) lymphatic, (3) monocytic. The last is rare. The general course of the three types is closely similar, and cases may occur in either the acute or the chronic form.

Acute leukemia of some type should be suspected when a patient shows swelling of the gums, bleeding into the mucous membranes of the mouth or ulceration of the mouth or pharynx associated with rapidly developing anemia and hemorrhages from mucous membranes or into the skin, especially if the spleen or lymph nodes are enlarged. The disease is often mistaken for Vincent's angina, agranulocytic angina, or other mouth infections because of the associated fever. Death may occur in a few days or at any time up to six months.

Chronic leukemia is often indicated by anemia, loss of weight, weakness, hemorrhages of mucous membranes or into the skin, together with enlargement of liver, spleen, or lymph nodes.

THE BLOOD FINDINGS IN LEUKEMIA

In all types of leukemia the diagnostic factor is the discovery in the blood of immature white cells, these may be of the lymphoid, myeloid, or monocytic variety according to the type of the leukemia. In acute cases the total white cell count may be below normal, slightly increased, or as high as 100,000. As a result of the large number of abnormal cells in the bone marrow, the normal marrow cells are crowded to such an extent that a rapid and progressive fall occurs in the red cell count, the hemoglobin percentage, and the number of platelets, hemorrhages due

to the marked reduction in the number of blood platelets are frequent.

In chronic cases the white cell count may reach a million and tends to be higher in the myelogenous than in the lymphatic type, but the white cells are less primitive than in acute cases and approach more closely the normal mature form. The same reduction in red cells, hemoglobin, and platelets occurs, but more slowly, and the disease may be prolonged for years.

Certain nonleukemic conditions, such as acute infections and intoxications, may occasionally show blood pictures simulating those of leukemia.

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In all but an occasional case the diagnosis of leukemia can be made with reasonable certainty on examination of a blood film. Slides or coverslips prepared by boiling in soapy water, rinsed in water and in alcohol, and dried with a soft cloth are satisfactory for making the films, more complicated technical procedures can be carried out later if necessary. In occasional obscure cases study of the bone marrow aided by supravital and oxidase stains of blood and marrow preparations may be essential. These procedures can usually be carried out only in a well equipped hospital.

At present x-ray treatment offers the only hope of retarding the progress of the disease. This may be quite effective in chronic myelogenous leukemia and may prolong the patient's life for years. Acute cases rarely respond to treatment of any sort. Anemia calls for treatment with iron and transfusions. Any therapy should be controlled by frequent blood examinations.

MEDICAL CARE INSURANCE

The Medical Expense Fund of New York, another nonprofit corporation selling insurance against doctors' bills, has received a permit from the State Insurance Department to solicit subscribers, it was announced by Louis H. Pink, state insurance superintendent, on May 3.

The corporation will serve residents of New York City and twelve other counties of the state and is said to have the backing of the medical societies in that area.

The distinctive feature of this plan is that, while the amount of protection remains at \$500 a year for all subscribers, the annual premium varies from \$9.00 to \$17, depending upon the subscriber's income. There will be four contracts offered, from Series D at \$9.00 a year, which is available to those whose monthly income is under \$100 if there are dependents and under \$75 if there are no dependents, to Series A at \$17, available to those whose monthly income is more than \$175 if there are dependents and \$125 if no dependents.

Of the \$500 maximum indemnity only \$300 is allowed for "general medical service." The policy does not cover the first \$5.00 of medical expense of any one illness or injury for holders of D contracts, the first \$7.50 for holders of C contracts and \$10 for holders of A and B contracts.

The corporation has offices at 122 Seventy-Sixth Street, Brooklyn. Dr. John B. D'Albora is president and Dr. F. E. Elliott secretary-treasurer.

Dr. Elliott explained that the fees applied to individuals. No dependents would be insured, he said, unless the head of the family, the "breadwinner," also was insured. The rate for dependents would be the same as that for the head of the family. Dr. Elliott added that the corporation was trying to work out a family policy, but held that two or three years of experience would be necessary to determine the proper rate basis.

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Jefferson County

Dr Kristian G Hansson, director of physical therapy at the Hospital for the Ruptured and Crippled and the New York Hospital, New York City, spoke at the meeting of the Jefferson County Medical Society on May 16 at the Black River Valley Club, on "Physical Therapy in Traumatic Conditions"

Kings County

A symposium on diabetes was on the program of the Medical Society of the County of Kings on May 21, as follows (a) Address "Diabetes in General and in Relation to Pregnancy," Dr Priscilla White, Boston, (b) Address "Diabetes in Relation to Surgery," Dr Alexander Marble, Boston

As reported in the Brooklyn *Eagle*, the Society at this meeting "voted to ask sponsors of the Medical Expense Plan of New York to refrain from asking members to join the plan until the society had acted on it.

"Discussing the resolution which finally was adopted, critics of the plan said it failed to meet with two requirements of the State Medical Society regarding medical indemnity insurance plans that such plans provide for free choice of doctors and that they solicit physicians to join their panels only after approval by the county medical society affected

"Dr John D'Albora, former president of the Kings County Medical Society, is president of the plan."

Nassau County

Psychiatry has made such strides that almost six times as many patients are now discharged from mental hospitals as cured, according to Dr C C Burlingame, psychiatrist-in-chief of the Hartford Retreat, Hartford, Connecticut, and chairman of the American Psychiatric Association, who spoke before the Nassau County Medical Society on May 28

Fifteen out of every 100 patients who entered mental hospitals were sent back to society only a few years ago, Dr Burlingame told the medical men at the Cathedral House, Garden City. Now, he declared, the ratio is reversed, with at least 85 out of 100 returning to normal, useful lives

He urged that people be induced to take mental illness out of the "disgrace class," so that it can be openly discussed and its methods of treatment improved.

Dr Aaron L Higgins, of Rockville Centre, elected a year ago, took over the presidential chair from Dr Eugene Calvelli, of Port Washington, during the annual business session. Other officers elected include the following: president-elect, C W Martin, Far Rockaway, vice-president, E N Whitcomb, Port Washington, secretary-treasurer, E K Horton, Rockville Centre, board of censors, N H Robin, Hempstead, W C Atwell, Great Neck, S F Gerde, Freeport, J M Quinn, Valley Stream, J M Galbraith, Glen Cove, Workmen's Compensation Board (2 years), Rudolph Dery, Lynbrook, F C Nichols, Sea Cliff, Stuart T Porter, Floral Park, delegate to State Society (2 years), David Edward Overton, Hempstead

Annual reports read at the meeting showed that twenty-seven committees had been ap-

pointed and functioning the past year. Most of these dealt with public health, and among the more important were those dealing with tuberculosis, heart disease, maternal welfare, child hygiene, diphtheria, laboratories, mental hygiene, nursing, orthopedics, physical therapy, and pneumonia

New York County

A resolution condemning the "spread of Nazi tyranny throughout Europe," and suggesting that immediate aid be dispatched to the Allied governments was passed at the monthly meeting of the Medical Society of the County of New York at the Academy of Medicine, on May 27

The following physicians were elected officers for the ensuing term at the recent annual meeting of the National Gastroenterological Association, New York Chapter: president, Anthony Basler, vice-president, Frank Yeomans, secretary, William C Jacobson, treasurer, Elhu Katz, trustees, Samuel Weiss, Randolph Manning, Isidor Ritter, Roy Upham

The Manhattan Dermatological Society at its meeting of May 14 elected the following officers for the ensuing term: chairman, Dr J Frank Fraser, vice-chairman, Dr Ludwig Oulmann, secretary-treasurer, Dr Anthony C Capollaro

Dr Ben Witt Key, of 1170 Fifth Avenue, ophthalmologist, died on June 5 after an illness of six weeks. He was fifty-six years old. During his practice in the city for more than thirty years, Dr Key was a surgeon, diagnostician, research worker, and contributor to journals of ophthalmology. He was one of the first ophthalmologists to perform the transplantation of the cornea

Niagara County

Dr George G Martin, assistant medical superintendent of Edward J Meyer Memorial Hospital, Buffalo, was guest speaker at the monthly meeting of the Niagara County Medical Society in the Tuscarora Club on May 14

Onondaga County

On the first of July a new complete transfusion service in Syracuse will be made available. It will serve the University, Memorial, City, and Psychopathic hospitals and will be located in the Hazard Laboratory of the Memorial Hospital. This service is made possible by an initial grant of \$5,000 from the Hendricks Research Fund of the Syracuse University Medical College. It is an outgrowth of the work done by Dr John B Alsever and Dr Charles A Gwynn in the use of placental blood for transfusions

The problem of contagion and household help has been tackled by the Onondaga County Medical Society, and under the leadership of Dr C George Murdock, functioning as a member of the child welfare committee of which Dr T C Wyatt is chairman, an aggressive program has been developed.

Everywhere, it has been found that the most significant results of this work have been in the field of tuberculosis. This constitutes the real menace to the home and it is upon this that the society is focusing its attention. However, there is hope that the unearthing of many cases of syphilis will be a by-product of these efforts

An educational program is being undertaken in which employers of domestics are being urged to request their servants to submit to annual physical examinations. Physicians are requested to cooperate by examining these people under financial agreement with the employee and employer. It is felt that this examination must include tuberculin testing and x-ray of the tuberculin positive group. For those cases in which this cannot be arranged satisfactorily through private channels, the chest clinic has volunteered its services.

The county society will print and make available to physicians "Health Cards," which, when signed, certify to the noninfectiousness of the individual. This certification will expire in one year.

Queens County

The Medical Society of the County of Queens listened to a paper, at its meeting on May 28, on "Diseases of the Peripheral Vascular System," by Dr Benjamin Jablons, chief of vascular diseases, Beth David Hospital, consultant, Metabolism, Polyclinic Hospital, associate physician, Polyclinic.

St. Lawrence County

Members of the St. Lawrence County Medical Society held their final spring lecture meeting at the Hepburn Hospital auditorium at Ogdensburg, on May 18. The speaker was Dr K. G. Hansson, of New York City, who discussed "Physical Therapy in Traumatic Conditions."

Saratoga County

Dr Henry W. Miller, of Brewster, has been elected chairman of the new Saratoga Spa Medical Advisory Committee, which has been studying a chemical analysis of state reservation mineral waters. Other members of the committee are Drs Augustus J. Hambrook, of Troy, Terry M. Townsend, of New York City, Alfred W. Armstrong, of Canandaigua, and G. Scott Towne, of Saratoga Springs.

Schenectady County

Three physicians of Schenectady, each of whom has practiced for fifty years, were honored at the meeting of the Schenectady County Medical Society in the Mohawk Golf Club on June 6.

They are Dr Henry G. Hughes, Dr Henry A. Kurth, and Dr M. S. Lord. Dr Kurth was unable to attend because of illness. Dr Hughes and Dr Lord spoke briefly.

The group also honored Dr Frank van der Bogert, program chairman of the society for thirty years. Dr van der Bogert was presented with a walking stick.

A golf tournament was held during the afternoon. Dr Clarence Ackerknecht had the low gross score. Blind booby prizes were won by Dr Ackerknecht and Dr F. Leslie Sullivan.

At the dinner in the evening, Dr Sullivan, president of the society, was presented with a picture of Dr Daniel Toll, president from 1811 until 1825. The presentation was made by Dr M. Wilson Toll, a member of the same family.

Music was furnished by members of the society led by Dr Glen Smith.

Schoharie County

The Schoharie County Medical Society held its semiannual meeting at the central school in Middleburgh on May 14.

In the afternoon interesting papers were given by Dr Arthur J. Wallingford and Dr C. Stuart Welch, of Albany. Dr David W. Beard presided and gave a report of the meeting of the New York State Medical Society to which he was the delegate. Dr Joseph Lawrence, of Albany, executive officer of the State Society, also addressed the meeting.

At the business session the following officers were nominated, the election to be held in the fall: president, Dr David W. Beard, of Cobleskill, vice-president, Dr R. G. S. Dougall, of Cobleskill, treasurer, Dr Duncan Best, of Middleburgh, secretary, Dr Herbert L. Odell, of Sharon Springs, censor, Dr Joseph Duell, of Jefferson, and delegate to the State Society, Dr David W. Beard.

Suffolk County

About thirty-five doctors attended the annual clinic of the Suffolk County Cancer Committee, on May 22 at the Southside Hospital, Bay Shore. Dr Charles C. Murphy, chairman of the committee, gave a brief outline of the work of the clinic and announced an increase of 300 per cent in the number of patients attending over the number the first year.

Dr Benjamin L. Feuerstein, director of the clinic and secretary of the committee, conducted a symposium on some striking cases. Dr Ira L. Kaplan, director of the Cancer Division of the New York hospitals, commented on each case and gave an illustrated lecture on several unusual radiologic and surgical procedures.

Tioga County

The Medical Society of the County of Tioga held its regular meeting on June 4 at the Mountain Top Inn, Waverly. Dr W. A. Moulton, of Candor, gave his report as delegate to the State Society meeting in May. Dr G. S. Carpenter, of Waverly, member of the Council of the State Society, spoke on its activities and work.

The county medical society authorized its president to appoint an advisory committee at the request of the county committee of welfare, H. A. Tompkins, to assist the committee in auditing bills for medical expenses against the county and advise him as to the reasonableness of such bills.

Wayne County

About forty doctors of the Wayne County Medical Society met on June 4 at the Newark Country Club. The speaker was Elmer G. Butts, commissioner of welfare in Wayne County. His talk and discussion had to do with new setup and revisions relating to medical care for welfare and old-age relief cases. The proposed plan is distinctly local in conception and has been evolved by Mr Butts's office in cooperation with committees from the medical society. It establishes fee schedules and simplifies report forms. In a resolution, the doctors approved the new plan as presented by Mr Butts. Mrs. Corydon Wheat, executive secretary of the Finger Lakes Non-Profit Hospital Association, attended the meeting and made it known that she was allowing the

Wayne County Medical Society members and families to join the hospital insurance group as a "courtesy group." This means that the society is considered as a group as if under the same employer. It was found that a number of the physicians have already joined this hospital service and a considerable number joined at the meeting.

Westchester County

Two hundred Westchester doctors and their guests dined at Westchester Country Club after an afternoon of golf, softball, and other sports, on June 5.

Dr Henry J Vier, president of the Westchester County Medical Society, proposed the toast to "the most wonderful country in the world, the United States of America." The assemblage stood and sang "The Star Spangled Banner."

The guests were Dr W P Anderton, president of the New York County Medical Society, Dr George E Milani, president of the Bronx Medical Society, and Dr Gilbert S Tabor, president of the Dutchess County Medical Society. There were no speeches.

James E Bryan, executive secretary of the society, awarded the prizes, mostly for golf and consisting of medical cases and supplies.

Deaths of New York State Physicians

Name	Age	Medical School	Date of Death	Residence
William B Acker	70	Bellevue	May 7	Hannibal
Amos F Blanchard	75	Buffalo	June 1	Jamestown
Frederick J Bruce	74	L I C Hosp	June 10	Brooklyn
Cecile L Greil	67	N Y Eclectic	June 10	Selden
Bergen F Illston	61	Buffalo	May 16	Utica
Edward C James	40	Johns Hopkins	June 4	White Plains
Ben W Key	56	Pennsylvania	June 5	Manhattan
Frank A King	66	L I C Hosp	June 13	Manhattan
Daniel G Kuhlthau	39	P & S N Y	June 3	Manhattan
Isidore R Lowenthal	67	Memphis	June 4	Manhattan
Harry A March	61	George Washington	June 10	Manhattan
William B Platner	79	Albany	June 7	Germantown
John T W Rowe	80	Bellevue	June 7	Manhattan
Nan G Seymour	64	Cornell	May 27	Manhattan
Charles F Wharton	77	Albany	May 25	Richmondville

"DIAGNOSIS AND ADMISSION"

JOHN H HAYES

O, a hospital superintendent's job
Is the only job for me,
For you work only twenty-four hours a day,
And the rest of your time is free,
And you always know, if you break a leg
Or need your appendix out,
There are plenty of doctors, nurses, and aides
Who can always be found about
And very many of these there are
Who, gladly, the chance would greet
To work on your anatomy,
Because revenge is sweet.
Yes, a super's job is an easy job—
Its really a sinecure,
For all you need is a worried look
And a heart that's tough, but pure,
And you have to be an engineer
And a decorator too,
Accountant, diplomat and judge,
And know what interns do
You have to be a housekeeper
And an expert on finance
And know how to run on a deficit
And when to take a chance.
Your knowledge of the human race
Must really be supreme
You must know how to buy the fuel and
gauze
And cabbages and cream,

And how to be nice to the chronic cranks
And answer each doc's complaint
And learn to distinguish which are real
And those that really ain't,
And how to run a school for girls,
And guide those who make laws,
You must be a tough old business man
And, also, Santa Claus,
You must meet with seventy-seven groups,
Who tell you what to do
And then do what you think is best
(And find it better, too)
Then thank them for their kind advice
And each thing they suggest,
And make them think you did the things
That they considered best
Some folks there are who call that lying
And they may be right at that,
But what else can a super do
Yet be a diplomat?
A super cares for the sickest folks—
(These healthy ones who call
Upon the real sick in their beds
Who rarely kick at all.)
So if you do not like your child
And do not wish him well
Just train him for a super's job
A substitute for Hell

—Hospital Reporter and Guide

Books

Books for review should be sent to the Book Review Department at 1313 Bedford Avenue, Brooklyn N Y. Acknowledgment of receipt will be made in these columns and deemed sufficient notification. Selection for review will be based on merit and interest to our readers.

REVIEWED

The Patient Is the Unit of Practice By Duane W Propst, M D. Octavo of 219 pages, illustrated. Springfield, Charles C Thomas, 1939. Cloth, \$3 50.

In the reviewer's opinion this is one of the best books of its kind in English. It should be read not only by every practitioner of medicine but by every medical student who ever hopes to treat patients. The patient is pictured in his true relation to the disease he bears. Part I deals with the "Nature of Disease," constitutional types of humans, race, constitutional disease potentials, adaptational phenomena, and "dis-equilibrium" between the patient and his environment. Part II touches on diagnosis in a generic sense and the establishment of a working hypothesis. Part III goes into broad therapeutic principles. The book is meaty but easy to read. Such philosophy as this book presents cannot help but make better doctors—the patient, not the disease, is treated. He is likened to "a planetarium that projects the spectacle of the stars upon a vaulted screen", the spectacle of his behavior is just as "splendid and mysterious."

G E ANDERSON

The Patient as a Person. A Study of the Social Aspects of Illness By G Canby Robinson, M D. Octavo of 423 pages. New York, Commonwealth Fund, 1939. Cloth, \$3 00.

This timely book deals with the patient as a person rather than as a guinea pig. Dr Robinson has dug into the social, environmental, and subjective aspects of organic and functional disease through the medium of social service and personal contact. He has, by numerous short case histories, pointed out that adequate diagnoses, as well as treatment, cannot be accomplished without taking into consideration the relation of the patient to his home life, his work, and his fellow men. An appraisal of his desires, aspirations, and human weaknesses is equally important. A series of 174 patients was studied, most of them attending the Johns Hopkins Hospital through its inpatient or outpatient department. Only 45 of this group were patients suffering from psychoneurosis. Most of the series suffered from true organic disease.

One cannot help but be stimulated by this excellent treatise. In the past among students of medicine there was a prominent desire to follow the patient to the autopsy table. Doctor Robinson has expressed a hope that there will grow an equal urge "to follow the patient into life." In the reviewer's opinion this book is a step in the right direction, true progress will be made only when our schools of medicine establish a chair in humanics with mandatory courses.

G E ANDERSON

The New International Clinics. Original Contributions, Clinics, and Evaluated Reviews of Current Advances in the Medical Arts Edited

by George M Piersol, M D. Volume II, New Series 2. Octavo of 321 pages, illustrated. Philadelphia, J B Lippincott Co., 1939. Cloth, \$3 00.

Articles on pellagra, diabetes, functions of the pituitary gland, and prognosis in pulmonary tuberculosis are among those to be found in this work. Wintrobe in "The Choice of Methods for the Correction of Anemia," describes modern methods of treatment, and gives a clear classification of the anemias. He condemns complex mixtures, such as those containing iron, copper, manganese, as well as various fractions of liver, gastric substances, and all the vitamins. "There is not enough consideration of the importance of exact diagnosis and the cost to the patient." He states that the liver fraction, sometimes recommended for secondary anemias, has not been proved to be of value in human beings given a reasonably adequate diet. To give preparations of this kind, largely for the iron content, is extravagant.

In addition to other articles of interest there are reports of clinics and a review of peroral endoscopy.

W E MCCOLLUM

The Electrocardiogram and X-Ray Configuration of the Heart By Arthur M Master, M D. Quarto of 222 pages, illustrated. Philadelphia, Lea & Febiger, 1939. Cloth, \$6 50.

The author has rendered a useful service to the clinician interpreting roentgenograms and electrocardiograms in diseases of the heart and neighboring structures. Many times the electrocardiographer has difficulty in evaluating the significance of certain electrocardiographic changes unless he can correlate them with the clinical and roentgenologic findings. In this volume the three are placed side by side in a very attractive form. The illustrations are excellent, and in the main the text accompanying them is good. The reviewer does not agree with some of the electrocardiographic interpretations given by the author. Several tracings are labeled "left axis deviation" that would not be so interpreted in his clinic, and our understanding of what constitutes a Q wave does not coincide with that of the author's. Nevertheless these are mooted points. The book is worth having in the library of anyone interested in cardiology.

E P MAYNARD, JR

Nutrition and Diet in Health and Disease By James S McLester, M D. Third edition. Octavo of 838 pages. Philadelphia, W B Saunders Co., 1939. Cloth, \$8 00.

The first half of the latest revision of this book is devoted to a thorough and accurate description of the physiologic aspects of nutrition. There are chapters on the metabolism of food components and total energy requirements. The chapter on vitamins is well presented and in-

cludes a description of the biochemical aspect of vitamins, their functions, symptoms of deficiency, and sources in foods. There are also chapters describing the nutritional value of all the common food products. Finally, infant feeding and the normal adult diet are presented. The second half of the book is devoted to the problem of nutrition in disease. The book is thorough, complete, and well written and can be recommended by the reviewer as one of the best books on the subject.

WILLIAM S COLLENS

The Art of Anaesthesia. By Paluel J Flagg, M D. Sixth edition. Octavo of 491 pages, illustrated. Philadelphia, J B Lippincott Co., 1939. Cloth.

This new edition resembles the previous editions of this standard book in many respects. It was written by the great advocate of pneumatology (anesthesia, resuscitation, and oxygen therapy) and as such serves as a reference for inhalational anesthesia and therapy by inhalation.

It may be said that Dr Flagg is the world's best administrator of ether by inhalation. This reputation is ably borne out by his book in which his description of the nitrous-oxide-ether technic is masterfully detailed. However, it is regrettable that more detail has not been given to the newer agents and in particular cyclopropane which has supplanted ether in many anesthetists' affections.

The inclusion of short treatises on local and spinal anesthesia appear out of place here and, being too short, are of no value. Their inclusion in this volume, which is essentially a treatise on inhalational forms, appears too evidently to bow to expediency. It would have been better to use this space for the inclusion of oxygen therapy which would have been in keeping with its inhalational motif. The discussion and description of resuscitation are complete, and one may very profitably refer to these pages, for they are authoritative. Flagg's efforts year after year to promote the principles and practices of resuscitation have finally resulted in firmly establishing this really lifesaving branch of medicine in its proper niche.

F PAUL ANSERO

An Introduction to Medical Mycology. By George M Lewis, M D, and Mary E Hopper, M S. Quarto of 315 pages, illustrated. Chicago, Year Book Publishers, Inc., 1939. Cloth, \$5.50.

Dermatologic literature has long been poorly supplied with an up-to-date treatise in the field covered by this book. It has been difficult to gather information on the subject of mycology as applied to dermatology without an extensive search of the literature.

The authors are to be congratulated for having brought this subject matter together in such a complete manner. The illustrations are remarkably good, and the bibliography is adequate and up to date.

Altogether this book is one that every dermatologist and most other physicians will want in their library as a book of reference in this branch of medicine.

JOHN C GRAHAM

Principles and Practice of Aviation Medicine. By Harry G Armstrong, M D. Octavo of 496 pages, illustrated. Baltimore, Williams & Wilkins Co., 1939. Cloth, \$6.50.

This text is an excellent source of information for all physicians, especially those who plan to work in this field of medicine, and also will be valuable for students of aviation, pilots, operators, and aircraft designers.

It is well known from research at Mineola during the World War and from subsequent experience that aviation medicine is deservedly a specialized branch of the practice of medicine.

Dr Armstrong has discussed the following subjects which are vital to all interested in aviation: history of aviation medicine, the flight surgeon, evolution of pilot selection and an introduction to pilot selection, medical examinations, effect of altitude and weather conditions on the pilot, speed, accidents in aviation, psychology of flight and protective flying equipment, as well as aerial relief and sanitation.

CONRAD BERENS

Problems of Ageing. Biological and Medical Aspects. Edited by E V Cowdry. A Publication of The Josiah Macy, Jr., Foundation. Octavo of 758 pages, illustrated. Baltimore, Williams & Wilkins Co., 1939. Cloth, \$10.

This interesting and stimulating book on the process of aging is the result of collaboration by investigators in different fields. The first chapter deals with aging in plants and is followed by chapters dealing with a similar investigation on aging, senescence, and death in protozoa, invertebrates, and vertebrates. Subsequent chapters discuss these processes in various systems of the body such as cardiovascular, digestive, nervous, lymphatic, etc. The book ends with a philosophic and social discussion of the process of aging from the point of view of the clinician by Lewellys F Barker.

With the increase of the number of people who reach old age, this volume assumes an added importance. It presents statistics, psychology, philosophy, and sociology of old age.

Two concepts of aging are presented in adequate fashion by various contributors: the first that aging is an involuntary process that operates cumulatively with the passage of time, the other view interprets the changes found in aged organs as due to infections, toxins, traumas, and nutritional disturbances. The consensus of opinion seems to be that both groups of factors operate. It is also obvious that many perplexing problems still exist in ascertaining the process of aging.

The book is worth while reading because of the stimulating manner in which the pertinent material is presented.

JOSEPH L ABRAMSON

Medical Jurisprudence and Toxicology. By William D McNally, M D. Octavo of 386 pages, illustrated. Philadelphia, W B Saunders Co., 1939. Cloth, \$3.75.

The book is divided into two distinct parts. The small section, Part I, on medical jurisprudence, deals with court procedures, presentation of medical evidence, expert testimony, and pertinent facts regarding sudden death and deaths occurring under suspicious circumstances. Tech-

nuc of staining and other valuable tests are described.

Part II makes up the bulk of the book and is devoted to toxicology. The material is presented in a thorough and scholarly fashion. Poisons are taken up in groups, which in turn are based on a chemical classification. Sources of poisoning, their effects, and treatment are considered. Tests for the identification of poisons are described, and postmortem appearances included.

This book is written in an authoritative manner, and the references are well chosen. It should make a valuable addition to the library of any physician.

CHARLES SOLOMON

Priests of Lucina. The Story of Obstetrics. By Palmer Findley, M.D. Octavo of 421 pages, illustrated. Boston, Little, Brown and Co., 1939. Cloth \$5.00.

Junio Lucina was the goddess of childbirth, and therefore this excellent title for the first book in English on the history of obstetrics. The author, lately professor of gynecology in the University of Nebraska, has been interested in this subject for a long time.

The text is fascinating, vivid, and extraordinarily readable, and the illustrations are excellent. The style is simple and clear, and there is not a tiresome page in the book. The great figures of history from Hippocrates to Whitridge Williams glow with life. We marvel at the knowledge of Soranus, and wonder how it could be lost for so many centuries. Scientific facts were slowly established by men who towered above those who laughed at them and abused them. Though the author does not say so, it seems to us that obstetrics has made more progress in our own lifetime than in all the ages.

Though developed for the most part in the biographic manner, there are excellent chapters on special phases of obstetrics. To the chapter on puerperal fever the name of Dora Colebrook might have been added as rivaling Semmelweis' in importance.

Far more entertaining than many of our modern novels, any physician with even a casual interest in obstetrics will enjoy this book. Every obstetrician—Williams did not like that word—simply must read it. Sometimes we need stimulation.

CHARLES A. GORDON

Biochemistry for Medical Students. By William V. Thorpe, M.A. Octavo of 457 pages, illustrated. Baltimore, William Wood & Co., 1938. Cloth, \$4.50.

This textbook is without question the most practical presentation of biochemistry to date, not only for use by medical students but also for the physician whether a recent graduate or one many years out of school. It compares in value with Wright's *Applied Physiology* and Clark's *Applied Pharmacology*, two other English works generally recognized as being near the top of the list as valuable textbooks in their fields.

It has decided clinical value. Arrangement of subject matter is excellent. The discussion is clear and concise. Free use of chemical formula helps the reader to understand changes that occur in physiologic processes.

This book is recommended to the medical profession as a means to a better understanding of clinical medicine and therapeutics.

PAUL C. ESCHWEILER

Pulmonary Tuberculosis, A Synopsis. By Jacob Segal, M.D. Octavo of 150 pages, illustrated. New York, Oxford University Press, 1939. Cloth, \$2.75.

This is an interesting little book which is exactly no more nor less than it purports to be—a synopsis of present-day knowledge of pulmonary tuberculosis.

The most favorable part of the book is the last chapter entitled "Prevention." In this the author sums up the highlights of knowledge concerning the prevention of this disease, and does it with much common sense and lucidity.

FOSTER MURRAY

The Rectum and Colon. By E. Parker Hayden, M.D. Octavo of 434 pages, illustrated. Philadelphia, Lea & Febiger, 1939. Cloth, \$5.50.

The author, in his preface, says that he "has attempted to cover the general subject of diseases of the rectum and colon without including unnecessary and unimportant detail." Among some of the subjects omitted are embryology, and with it anomalies of the colon, parasitic diseases of the intestines and diseases of the appendices, epiploicae. More illustrations would clarify the text, but this lack will no doubt be corrected in future editions. However, the subject is covered very well for a book of its size.

The chapters on lymphogranuloma, inguinale, and ulcerative colitis are excellent. The chapter on malignant tumors of the rectum and colon is fairly complete, and includes all the most common procedures in its treatment.

It is an excellent book, and brings up to date knowledge of the subject of diseases of the rectum and colon. It is recommended to the proctologist, surgeon, and to the general practitioner.

CHARLES GOLDMAN

Medical Microbiology. By Kenneth L. Burdon, Ph.D. Octavo of 763 pages, illustrated. New York, Macmillan Co., 1939. Cloth, \$4.50.

The plan of this textbook is well conceived and executed. Unfortunately, the author falls short of his purpose in that the subject matter is treated too sketchily to be of sufficient value to either the advanced or undergraduate student of medicine. Some excellent illustrations accompany the text.

ALVIN HOLLANDER

Modern Clinical Psychiatry. By Arthur P. Noyes, M.D. Second edition. Octavo of 570 pages, Philadelphia, W. B. Saunders Co., 1939. Cloth, \$5.00.

Psychiatry has made steady progress since the World War. Many theories have been developed in an attempt to explain the pathogenesis of the neuroses as well as the psychoses. In fact, several schools of psychiatric thought have developed. Nevertheless, the basic clinical manifestations of the different psychotic groups have remained unchanged. Dr. Noyes has succeeded in writing a

book that presents a clear picture of the different psychiatric disturbances, stressing not only the clinical picture but also attempting to explain the cause, meaning, and purpose of the deranged personality functions with a resulting disturbance of social adjustment

The second edition is necessary in order to incorporate contributions made in psychiatry since the publication of the first. Pharmacologic treatment of certain major psychoses, especially the shock therapy with insulin and metrazol, is well outlined. Several chapters are devoted to the psychologic mechanisms in normal as well as abnormal behavior. Throughout the entire book the author has manifested a practical approach to the problem and has laid considerable emphasis on therapy. He has successfully harmonized the various views and theories of the different schools of psychiatric thought. The student is, therefore, enabled to approach the subject of psychiatry unhampered by conflicting views and theories that are now being incorporated in textbooks on psychiatry.

The book is recommended as a text for students because of its clarity, brevity, and emphasis on fundamental facts and principles. It should appeal to the general practitioner who may use it as a reference work. There is a well-selected bibliography at the end of each chapter, which will enable the student to select original articles dealing at length with many topics which of necessity had to be mentioned only briefly in the book. This well-written book has established itself as a practical guide, especially for beginners in psychiatry.

IRVING J SANDS

Mental Health. Publication of the American Association for the Advancement of Science, No 9. Edited by Forest R Moulton. Quarto of 470 pages. Lancaster, The Science Press, 1939. Cloth.

This book contains a unique symposium (the fourth of the American Association for the Advancement of Science in the field of important problems of public health) on mental health which was organized in collaboration with the American Psychiatric Association and with the cooperation of the United States Public Health Service, the National Committee for Mental Hygiene, and the Mental Hospital Survey Committee.

The contributors of this symposium are well qualified to speak authoritatively on various spheres of mental health interest, such as psychiatric research, causes of mental disorder, economic aspects of mental ill health, the influences of physical and cultural environment, mental health administration, and professional and technical education in the field. It is the most up-to-date, comprehensive information available which springs from forty-nine papers, twenty invited formal discussions, and twenty-one informal discussions.

No physician can afford not to have a copy of this book within handy reach.

FREDERICK L PATRY

From Head to Foot. By Armitage Whitman, M D. Octavo of 262 pages. New York, Farrar & Rinehart, Inc., 1939. Cloth, \$2 50.

This is a popular book for the lay public on orthopedic surgery. Dr. Whitman's style is terse and direct, and he has the making of an essayist if he is not already one, but why should he waste his talents on a reader who has not the basic foundation to interpret the problems presented?

The medical profession gives years of study to lay a foundation for an understanding of the human body, therefore why should it be assumed that such works as this are of any value to the reader from whom they are prepared? The book is well done, but the effort misdirected.

JACQUES C RUSHMORE

Chemical Analysis for Medical Students. Qualitative and Volumetric. By R E Illingworth, Ph D. Duodecimo of 152 pages. Baltimore, William Wood & Co., 1938. Cloth, \$1 50.

This little book written for the medical student is a short and concise review of elementary inorganic and organic analysis. It avoids theory and gives the simple reactions and tests. The author spends a large part in volumetric analysis which is of importance for every medical student.

Titration and pH indicators are covered. The many equations appended offer one a quick review while performing simple analysis.

MORRIS ANT

Gardiner's Handbook of Skin Diseases. Revised by John Kinnear, M D. Fourth edition. Duodecimo of 239 pages, illustrated. Baltimore, Williams & Wilkins Co., 1939. Cloth, \$3 60.

This small book on dermatology is written expressly for the general practitioner and the medical student.

For the general practitioner it provides basic information on all the common diseases, and briefly outlines many of those a little less frequently encountered.

For the medical student there is more than ample information to give him a general survey and understanding, from the anatomy of the skin and therapy, through to diagnosis and special treatment. With a book such as this as his guide, his medical course in this subject should be greatly simplified.

As one goes over the text rather carefully he finds no evidence of unique theorizing or tangential discussion, but, rather, that it is fundamentally sound in the light of our present knowledge and that it is written in a clear, easily readable style.

We do not hesitate to recommend it to those who can use a book of this elementary type.

E ALMORE GAUVAIN

Clinical Bacteriology. By F A Knott, M D. Octavo of 426 pages, illustrated. Philadelphia, P Blakiston's Son & Co., 1939. Cloth, \$4 50.

This text has been written mainly for those who have had some basic training in bacteriology and who wish a brief description of bacteria and the phenomena associated with active infection. The book is too sketchy and meager to be used with advantage by medical students, nor has the author written it for that purpose primarily. References and bibliography are lacking. The photomicrographs are excellent. This text might

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MORRIS L. RAKIETEN

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It is to be hoped that Professor Clark will give us subsequent editions of this volume which undoubtedly will be received most favorably by teachers and students of anatomy.

H. T. WIKLE

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This book is an attempt to reproduce and preserve the teachings and findings of the 'Master' (Dr E. I. McKesson), as well as his (Dr Clement's) own impressions and experiences resulting from the use of nitrous oxide-oxygen over a period of many years.

This book fills a long felt want for authoritative advice in the field of nitrous oxide-oxygen anaesthesia. It should be accepted promptly and widely as a basic text in the same category with Guedel's "Inhalation Anaesthesia" and Maxson's

'Spinal Anaesthesia'—required reading and permanent reference sources of every student of anaesthesiology.

A study of the contents of this book teaches the reader not only the fundamentals and details of nitrous oxide-oxygen anaesthesia but also many related techniques in anaesthesia, e.g., carbon dioxide absorption, positive pressure, and endotracheal intubation.

It is in the field of their greatest experience, nitrous oxide-oxygen anaesthesia, that the knowledge of McKesson and Clement is most valuable.

The theoretical background of anaesthesia in general and nitrous oxide-oxygen anaesthesia in particular is presented briefly. Practical information, however, is abundant, detailed, well organized, and grouped in good logical and pedagogical form.

The arrangement of the text necessarily encourages repetition of material, e.g., premedication is presented in Chapters 4, 6, 12, 21, and in Part 5. For the beginner, however, this redundancy proves to be a good teaching procedure.

A thorough study of this book is an excellent beginning for the novice in anaesthesia. Even the experienced anesthetist will learn many facts and procedures of practical aid.

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HENRY M. MOSES

book that presents a clear picture of the different psychiatric disturbances, stressing not only the clinical picture but also attempting to explain the cause, meaning, and purpose of the deranged personality functions with a resulting disturbance of social adjustment.

The second edition is necessary in order to incorporate contributions made in psychiatry since the publication of the first. Pharmacologic treatment of certain major psychoses, especially the shock therapy with insulin and metrazol, is well outlined. Several chapters are devoted to the psychologic mechanisms in normal as well as abnormal behavior. Throughout the entire book the author has manifested a practical approach to the problem and has laid considerable emphasis on therapy. He has successfully harmonized the various views and theories of the different schools of psychiatric thought. The student is, therefore, enabled to approach the subject of psychiatry unhampered by conflicting views and theories that are now being incorporated in textbooks on psychiatry.

The book is recommended as a text for students because of its clarity, brevity, and emphasis on fundamental facts and principles. It should appeal to the general practitioner who may use it as a reference work. There is a well-selected bibliography at the end of each chapter, which will enable the student to select original articles dealing at length with many topics which of necessity had to be mentioned only briefly in the book. This well-written book has established itself as a practical guide, especially for beginners in psychiatry.

IRVING J SANDS

Mental Health. Publication of the American Association for the Advancement of Science, No 9. Edited by Forest R. Moulton. Quarto of 470 pages. Lancaster, The Science Press, 1939. Cloth.

This book contains a unique symposium (the fourth of the American Association for the Advancement of Science in the field of important problems of public health) on mental health which was organized in collaboration with the American Psychiatric Association and with the cooperation of the United States Public Health Service, the National Committee for Mental Hygiene, and the Mental Hospital Survey Committee.

The contributors of this symposium are well qualified to speak authoritatively on various spheres of mental health interest, such as psychiatric research, causes of mental disorder, economic aspects of mental ill health, the influences of physical and cultural environment, mental health administration, and professional and technical education in the field. It is the most up-to-date, comprehensive information available which springs from forty-nine papers, twenty invited formal discussions, and twenty-one informal discussions.

No physician can afford not to have a copy of this book within handy reach.

FREDERICK L. PATRY

From Head to Foot. By Armutage Whitman, M.D. Octavo of 262 pages. New York, Farrar & Rinehart, Inc., 1939. Cloth, \$2.50.

This is a popular book for the lay public on orthopedic surgery. Dr. Whitman's style is terse and direct, and he has the making of an essayist if he is not already one, but why should he waste his talents on a reader who has not the basic foundation to interpret the problems presented?

The medical profession gives years of study to lay a foundation for an understanding of the human body, therefore why should it be assumed that such works as this are of any value to the reader from whom they are prepared? The book is well done, but the effort misdirected.

JACQUES C. RUSHMORE

Chemical Analysis for Medical Students. Qualitative and Volumetric. By R. E. Illingworth, Ph.D. Duodecimo of 152 pages. Baltimore, William Wood & Co., 1938. Cloth, \$1.50.

This little book written for the medical student is a short and concise review of elementary inorganic and organic analysis. It avoids theory and gives the simple reactions and tests. The author spends a large part in volumetric analysis which is of importance for every medical student.

Titration and pH indicators are covered. The many equations appended offer one a quick review while performing simple analysis.

MORRIS ANT

Gardiner's Handbook of Skin Diseases. Revised by John Kinnear, M.D. Fourth edition. Duodecimo of 239 pages, illustrated. Baltimore, Williams & Wilkins Co., 1939. Cloth, \$3.50.

This small book on dermatology is written expressly for the general practitioner and the medical student.

For the general practitioner it provides basic information on all the common diseases, and briefly outlines many of those a little less frequently encountered.

For the medical student there is more than ample information to give him a general survey and understanding, from the anatomy of the skin and therapy, through to diagnosis and special treatment. With a book such as this as his guide, his medical course in this subject should be greatly simplified.

As one goes over the text rather carefully he finds no evidence of unique theorizing or tangential discussion, but, rather, that it is fundamentally sound in the light of our present knowledge and that it is written in a clear, easily readable style.

We do not hesitate to recommend it to those who can use a book of this elementary type.

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HENRY M. MOSES

Life and Letters of Dr William Beaumont. By Jesse S Myer, M D Octavo of 327 pages, illustrated St. Louis, C V Mosby Co, 1939 Cloth, \$5 00

It is fortunate that Dr Myer's biography of America's pioneer physiologist has been reprinted Dr Myer has set down in entertaining fashion all the known facts surrounding the famous experiments on Alexis St. Martin, the story of which stands out with particular brilliance against the background of Beaumont's otherwise colorless life Much of the book consists of clippings and excerpts from Beaumont's diaries, letters, and contemporary newspapers, often in facsimile Photographs are also present in profusion All of this material, attesting to a tremendous amount of research, is well organized and presented, and Dr Myer's own style is clear and concise There are two introductions, one by Osler, a complete bibliography, a good index, and a valuable supplement on "literature references and abstracts of cases of gastric fistulae prior to that of St Martin"

MILTON PLOTZ

Materia Medica, Drug Administration and Prescription Writing By Oscar W Bethea, M D Fifth edition Octavo of 577 pages, illustrated Philadelphia, F A Davis Co, 1939 Cloth, \$5 00

This edition conforms with the United States Pharmacopœia XI and the National Formulary VI Some drugs and prescriptions have been omitted and a large number of prescriptions added.

Part 1 describes official and nonofficial drugs and Part 2 prescription writing Most practitioners could read the latter section with interest and benefit The usual but generally unsuccessful plea for the general use of the metric system in writing is made A good opportunity is furnished to review medical latin, with tables, genitive case endings, and abbreviations

In Part 3, a number of prescriptions illustrate some of the common errors with corrections It is a practical and useful volume.

W E McCOLLOM

Treatment by Manipulation. By A G Timbrell Fisher, M.B Octavo of 255 pages, illustrated New York, Paul B Hoeber, Inc, 1939 Cloth, \$3 75

The author of this work aims to set forth the true principles of manipulative procedure and place the latter in the hands of medical men with proper training and thus stamp out the increasing evil of unqualified cults from the days of the bone setters to our present chiropractors

He deals with the various schools of thought concerning manipulation, and gives the views of this procedure from such men as John Hunter, John Hilton, H O Thomas, Sir James Paget, and Wharton Hood Their prejudices against this form of treatment had to be overcome, except for Paget's condemnation for "too long rest for a joint" Hunter also thought that movements of joints were valuable after sprains and injuries and showed that inflammation of joints was accompanied by the outpouring of coagulable lymph and the formation of adhesions.

An interesting chapter is devoted to "The Cult of Osteopathy," from its introduction in 1874 by Andrew T Still to its condemnation in a report of the House of Lords in 1935

The pathology of joints benefited by manipulation may fall into one of the following groups (1) cases with adhesions, (2) functional or hysterical cases, (3) unreduced dislocations or (4) subluxations, (5) miscellaneous group

The technic of manipulative treatment with anatomic and pathological sketches are very clearly portrayed The anatomy, pathology, and manipulative technic in the most common affections of the spine and sacroiliac joint are dealt with, giving very valuable hints in the various procedures used

JOSEPH I NEVINS

Treatment by Diet. By Clifford J Barborka, M D Fourth edition Octavo of 691 pages, illustrated Philadelphia, J B Lippincott Co, 1939 Cloth, \$5 00

This book has become a standard in the past five years as a guide in treating disease by diet. This fourth edition contains considerable new material, particularly on vitamins and minerals and also on the treatment of Addison's disease.

The specific diet outlines, however, could be shortened, and half the book's space could be saved or replaced by more detailed clinical observations and nutritional physiology Ketogenic diets and their use are still the best part of the book.

The author refers to a simple normal dietary on pages 28 and 29 This reference seems to be a typographical error The reader can find this sample of a normal diet on pages 42 and 43

MORRIS ANT

Disorders of the Blood. Diagnosis, Pathology, Treatment and Technique By Lionel B H Whitby, M D, and C J C Britton, M D Third edition Octavo of 603 pages, illustrated Philadelphia, Blakiston Co, 1939 Cloth, \$7 50

The third edition of *Disorders of the Blood* by Whitby and Britton is one of the best contributions to modern literature on the subject Written in the inimitable style of the Britton, it gives a lucid and up-to-the-minute treatment of the subject with thoroughness Controversial matters are handled understandingly and not buried in a maze of useless and complex considerations The student is therefore not left in a puzzled state of mind but with the issue clearly outlined

The illustrations are excellent Although not photographs, they depict the conditions pictured faithfully After each chapter is an excellent summary and an adequate list of pertinent references In this edition, eighteen pages have been added to the text as well as a number of new figures The section on technic is well organized, and the selection of methods described manifests unusually good discrimination In view of the recent advance in hematology, particularly concerning knowledge of blood changes in vitamin K deficiency, sulfanilamide, x-ray, the deficiency states, etc, this book represents a very valuable addition to the laboratory worker or physician whose work brings him in touch with the blood in the laboratory or in the patient

MAX LEDERER

Textbook of Medical Treatment. By various authors. Edited by D M Dunlop, M D Octavo of 1127 pages. Baltimore, Williams & Wilkins Co, 1939. Cloth, \$8 00

This admirable book contains over 1,000 pages of sound advice. The contributors are without exception eminent Scottish physicians, for the most part members of the medical faculties at Edinburgh, Glasgow, and Aberdeen. As the preface makes clear, "the work is not a small handbook of treatment nor yet a vast encyclopedia." Although pharmacapeutics is not neglected, "a large part of the book deals not with drugs but with the management of the case in the widest sense of the term." On the whole, the editors have succeeded admirably in producing a textbook which is simple, clear, up to date, and sensible.

Naturally, the individual sections are of varying degrees of excellence. Dr McNee's section on the liver and that of Drs Gilchrist and Hill on diseases of the heart and circulation are unusually good. One of the happiest features is the recognition of the importance of psychotherapy in general practice. Dr MacCalman's chapter on this subject is a model of what an essay of this sort should be and deserves wide reading, possibly in the form of a reprint for distribution to senior medical students.

Most of the therapy is in accord with good practice in this country, but there is a deplorable tendency to recommend proprietary medications. For the treatment of iron deficiency anemias, there is recommended on page 472 a list of six preparations, five of which are proprietaries in which the dosage is given in such terms as "plastules" without any indication of their iron content.

MILTON PLOTZ

Brucellosis in Man and Animals. By I Forest Huddleson, D V M. Octavo of 339 pages, illustrated. New York, The Commonwealth Fund, 1939. Cloth, \$3 50

This is a revised edition of *Brucella Infection in Animals and Man*. The original edition, published five years ago, dealt chiefly in laboratory methods of diagnosis while the revised edition covers the clinical aspects of the disease as well.

The author, with the assistance of Drs A V Hardy, J E DeBono, and Ward Giltner, as contributing authors, has produced a work which should be valuable to all medical practitioners. It goes into detail concerning epidemiology, pathology, clinical types and clinical analysis, symptomatology, and treatment. It should also prove valuable to the veterinarian and laboratory worker who may turn to its pages for any information relative to brucellosis in animals.

The book contains forty excellent illustrations and twenty-one complete case reports.

GEORGE H HOPSON

Recent Advances in Medical Science. A Study of Their Social and Economic Implications. By Sir Edward Mellanby, M D. Duodecimo of 62 pages. Cambridge. At The University Press, New York. The Macmillan Co, 1939. Paper, \$7 5

This small volume contains the Rede Lecture delivered by Sir Edward Mellanby before the

University of Cambridge in April, 1939. In it he deals with the effects of medical discovery on social life and medical practice, both within and outside the hospital. After a brief description of the chief medical advances of the recent past the author discusses the relation of poverty and malnutrition to ill health. Mellanby then goes on to discuss the relation of medical science to its application by means of legislative schemes. It is his opinion that the state of medical knowledge is an important factor in any attempt to diminish morbidity and mortality by means of legislative or administrative measures. This little book is well written, does not take long to read, and should be read by every physician concerned with the problems facing the medical profession today.

GEORGE ROSEN

Treatment in General Practice. The Management of Some Major Medical Disorders. Vols I and II. Octavo. Boston, Little, Brown and Co, 1939. Cloth, \$7 50

These two volumes published in the United States contain the subject matter of articles which first appeared in the *British Medical Journal* and later were published in England in book form. The first volume deals with the treatment of acute infectious diseases and of cardiovascular and some lung diseases. The second volume discusses chronic conditions such as diseases of the nervous system, digestive system, and blood, rheumatic, metabolic, and kidney diseases.

The articles are by prominent clinical teachers of Great Britain and furnish authoritative accounts presented in a clear fashion without too much theoretical discussion. In general, the methods of therapy are very much like those of the United States.

The format of the volumes is excellent and very creditable to the publishers who are well known in other fields but have not yet published many medical books.

W E MCCOLLOM

Functional Disorders of the Foot. Their Diagnosis and Treatment. By Frank D Dickson, M D, and Rex L Diveley, M D. Octavo of 305 pages, illustrated. Philadelphia, J B Lippincott Co, 1939. Cloth, \$5 00

A brief description of the evolutionary development of the human foot, followed by some salient anatomic and physiologic facts accompanied by sketches, gives the reader a background for the chapters to follow.

The cardinal functional and pathologic conditions of the skin, fascia, muscles, blood vessels, bones, nails, and metabolic dysfunctions of the feet are described in their order with a few major operative procedures for hallux valgus.

Other chapters of importance deal with foot exercises, technique for strapping the feet, and the proper selection of shoes.

JOSEPH I NEVINS

Laboratory Manual of the Massachusetts General Hospital. By Francis T Hunter, M D. Third edition. Duodecimo of 119 pages. Philadelphia. Lea & Febiger, 1939. Cloth, \$1 75

This book was originally intended as a pocket outline of the routine laboratory procedures em-

ployed at the Massachusetts General Hospital to be used by the interns. For that purpose, it is good, for it gives briefly a few well-chosen tests that have proved reliable. In some of the tests certain pitfalls and sources of possible error are pointed out. It cannot, however, be of great value to practitioners who might be interested in many other tests that cannot possibly be included in a small pocket manual. Moreover, this book merely enumerates the tests and outlines the procedures, but it does not give any interpretations or physiologic bases on which these tests depend, facts that would be of interest to many practitioners. It is, however, a good manual for those who wish to become acquainted with a relatively small number of reliable procedures used routinely in hospitals.

DAVID M. GRAYZEL

A History of Tropical Medicine Based on The Fitzpatrick Lectures Delivered Before the Royal College of Physicians of London, 1937-1938. By H. Harold Scott. In two volumes. Octavo of 1,165 pages, illustrated. Baltimore, Williams & Wilkins Co., 1939. Cloth, \$12.50 per set.

This history of tropical medicine is intended not only for the specialist in tropical diseases, many of which are coming to be recognized everyday in nontropical countries, but is in-

tended for the general medical man as well. The recounting of the conquest of diseases, diseases that now are familiar to all, is as thrilling as any novel. It is recommended especially for light, late-evening perusal.

ANDREW M. BABEY

The Interrelationship of Mind and Body Volume XIX of a Series of Research Publications of the Association for Research in Nervous and Mental Disease. Octavo of 381 pages. Baltimore, Williams & Wilkins Co., 1939. Cloth, \$6.00.

This is the nineteenth volume issued by the Association for Research in Nervous and Mental Disease. It maintains the same high standard of usefulness, information, and clarity of presentation as the previous volumes. The subject matter, however, lends itself more readily to a philosophic discourse.

The contributors are eminently fitted to discuss their phase of the subject, and the editors have done a good job in putting the material into a coherent whole.

The subject is presented very adequately. It sums up our knowledge of the interrelationship of mind and body and is a volume of decided value.

JOSEPH L. ABRAMSON

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A concise tabulation of the accepted products has been published for convenience of physicians wishing to check quickly the products they consider using or prescribing. For more leisurely study of the product, "New and Nonofficial Remedies" published by the American Medical Association, supplies detailed information.

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NEW YORK STATE JOURNAL *of* MEDICINE

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VOLUME 40

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Editorial

The Green Light Turns on Military Preparedness

Classification of physicians for military service in the Nation has already begun. In this state, owing to the operation of the revised Workmen's Compensation Law, the medical profession has been classified for some time. It has been cooperating with the Labor Department on a highly satisfactory basis due to unremitting hard work on behalf of injured laborers by the Labor Department and the Compensation Committee of the State Society. It works well because everyone concedes something to the end that the injured may have competent service.

No one today would propose seriously the abandonment of traffic control on our streets because, involving regimentation of a sort, it was unconstitutional. The principle under which the profession has classified itself with respect to compensation service has been thoroughly tried out, and the administrative machinery exists under control of the profession itself in the State Society and the county units to facilitate the larger task ahead.

Proposals are now being studied, and in certain experimental areas have been put into actual operation for simplification of welfare work along lines similar to those that have been so well tested under the Workmen's Compensation Law. Thus, the profession in New York State is already experienced in the administrative work necessary to undertake the task of classification of physicians for military service.

Since the greater part of military medicine under war conditions consists of traumatic surgery, might it not be possible, at least in this state, to utilize in some manner our reservoir of compensation cases under a military training plan? No other considerable source of traumatic material exists in times of peace or preparation, and merely to put physicians in uniform does not make military surgeons.

Because of its peculiarly advanced status in these respects, New York State could be utilized as an experimental area with the co-operation of its universities and teaching facilities. The long experi-

ence of the committees of the State Medical Society, which now know not only what can be done but more important still what *cannot* be done successfully, should not be cast into the discard but utilized to the fullest possible extent

To focus attention on the variety of problems encountered in military work of a kind not ordinarily encountered in the course of civilian practice, we publish in this issue a number of articles related to the peculiar enterprises of the military services. Medicine has a real job to do. It must furnish well-qualified men for the military services, it must conserve well-qualified men for the needs of civilian practice, it must revamp its postgraduate training opportunities to the exigencies of the times, and it must study intensively the changes in procedure and education necessitated by a new method of warfare in three dimensions. At the same time it must not neglect its campaign for more efficient administration and practice with respect to welfare work. It is a large order, but the lights are green.

Protecting Insurance in Wartime

In considering the problems of defense mobilization and those of possible future active war service, the matter of physicians' insurance arises. Physicians as a group depend more largely on insurance to protect their families and their old age than almost any other group of citizens.

Yet among those first called upon to volunteer their services are the physicians. To those who respond are given commissions of the rank of first lieutenant or captain with net pay insufficient to maintain, in many instances, the insurance programs that they have set up as their principal security. These insurance programs have been based on their earning capacity in civil life and frequently represent their only resource and the future security of their dependents.

As soon as the physician enters military service his accident and life contracts are jeopardized. This would presumably be true if his entry were only for a training period. However, in case no waiver of liability existed, as in the instance of the government war risk contracts of 1917-1918, there would still be the matter of premium default.

In these circumstances he might avail himself of one of the following plans:

1. Automatic extended insurance at the face value of the policy for a period dependent upon the amount of cash reserve in the policy. This constitutes a lapse of the policy and means that the physician must show new evidence of insurability upon his return and perhaps reinstate the policy at a new age level.

2. Automatic premium loan—whereby the company lends the

insured his own money at 6 per cent interest to pay the premiums when due, up to the point where the cash value is exhausted. It seems unlikely that in the depression period after his return he would be able to pay back this money or even to continue paying the 6 per cent interest plus the premiums. Therefore, he would probably be forced to cancel the policy eventually and would have meanwhile sacrificed the savings represented by that portion of the cash value that has been spent.

3. A paid-up insurance policy, at a much reduced face value dependent upon the amount of existing cash reserve. This would automatically greatly reduce the protection to his family during his absence and would likewise ruin the future protection for his old age.

To provoke discussion of this subject, we suggest that there might be arranged a basis of transfer from private to government insurance at cost with credits for earned cash surrender values. For if military service is to become a fixture of American life as seems probable, it is as well right now to contemplate a long-term program for physicians with respect to insurance.

In a matter of so much concern to the savings and future security of physicians and others, it seems to us highly important that the question of a premium moratorium for life and accident policies should be opened for discussion by this Society and its component county societies without loss of time. A bill for compulsory military training is before Congress now.

Obsolete

The modern, mobile form of warfare seems to have precluded the use of poison gas. At least mention of it has been conspicuously absent in news dispatches of the current fighting in Europe. Developed for and adapted to static warfare, in trenches and fortifications of the fixed type, it seems to have been outmoded already, except as a weapon of attack upon relatively fixed civilian populations, by the motorization of troops.

Gas has been abandoned apparently in favor of the subtler poison of treachery—a poison apparently much more effective in that it produces casualties among civilians, reaches state and national capitals in adequate concentrations to permeate even the air-conditioned rooms of legislatures, and destroys the morale not only of fighting men but also of workers. There is no mechanical safeguard against it, no chemical test for it.

Gas shells were marked, as many will recall, with a blue or a yellow cross in the ingenuous days of our immaturity. As we have aged and civilization has progressed to new, high levels of idealism, the old symbols and practices have been superseded by the more subtle and effective double cross.

The Miniature Chest Film

The procedure of periodic x-ray examinations of everyone to facilitate the early detection of pulmonary tuberculosis in the interest of public health is no new measure advocated by the medical profession. It has been the enormous expense of such an undertaking that has hindered until now the universal application of this method for case-finding surveys. Only certain industries, certain labor organizations, and the majority of nursing schools have employed this means of prophylaxis to combat routinely the so-called white plague and to nip in the bud incipient cases of pulmonary phthisis.

It is to D'Abreu, of Brazil, that we owe the first large-scale case-finding report of tuberculosis. In 1936 he developed the technic of photographing fluoroscopic images on regular small-size moving-picture film. This, of course, necessitated enlargement either by development or projection before an accurate reading could be made. Potter, Douglas, and Birkelo,¹ however, have devised a method

of photoroentgenography that enables a team of 6 individuals to take permanent records of the chests of large numbers of people at a rate of more than 1 a minute. They use a 4- by 5-inch film. In the development of this method, the diagnostic accuracy of these small photographs was checked against films of full size taken on the same patients in 1,610 cases. The percentage of error in the small-size films was found to be only 2.6 per cent.

It is not held that these small films furnish the wealth of detail that can be seen on the usual chest plate. But the fact that this method of photoroentgenography costs one-tenth as much as the standard means now commonly in use and that it is more than 97 per cent accurate in recording pulmonary tuberculosis, which can be detected by the roentgenologist, recommends it as a prophylactic measure. In time it may take its place with those other simple and inexpensive measures that have served to eradicate diphtheria, smallpox, and a host of other conditions as menaces to the public health.

¹ Potter, H. E., Douglas, B. H., and Birkelo, C. C. *Radiology*, 34: 283 (Mar) 1940.

Sound Judgment

It is always refreshing to read of the clarity of vision that our courts apply to the solution of suits brought for malpractice. If this were otherwise, many an injustice would be done to capable, conscientious physicians who have experienced an unavoidable surgical accident.

A case in point is the suit brought for facial paralysis following radical mastoidectomy.¹ The plaintiff contended that the operation had been performed unskillfully and negligently. The medical testimony, on the other hand, was unconflicting and was in accord that a radical mastoidectomy is a delicate operation and that in this instance it had been skillfully performed, except that the facial nerve within the field of operation had been injured. Following a directed

verdict for the physician an appeal was taken by the plaintiff.

The higher court affirmed the judgment of the trial court. It found that the facial nerve, where it was injured, was in the immediate region of the surgical field and that in this type of operation there is always danger of traumatizing it, even when the surgeon operates with the highest degree of skill. The court also held that in a case of this sort expert medical testimony is the controlling factor since the only questions at issue were those of science.

To practice medicine in its highest sense requires courage, and it is such learned judgment that is ever reassuring against the threat of a malpractice action for what, as in this instance, is an unavoidable incident under the best of circumstances.

MEDICAL PROBLEMS OF DIVING AND SUBMARINES*

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MY SUBJECT is quite different from those commonly heard in gatherings of this kind, but I hope to be able to show that the problems in this field are closely allied to some of those that you encounter in your daily practice

Man is designed to live at the junction plane of two great fluid oceans, the air above him and the water below, but he is a restless creature not content to remain where he belongs. He yearns to voyage up into the heavens and down into the ocean depths. For many centuries he was restricted in his excursions by the lack of wings to fly and fins to swim, but recently he has devised ships for each of these purposes.

Still chafing at his limitations, he wants to go higher and higher and deeper and deeper, but he lacks the special vital equipment that enables birds and fishes to adapt themselves to the conditions of their environment. When man attempts to fly he is a sad bird, and when he tries to live under water he is but a poor fish. However, he persists in his efforts to penetrate the regions where he is ill fitted to survive and calls on the medical man to aid him. Thus we have need for two new branches of the healing art—aviation medicine and submarine medicine.

At first glance it might appear that these two are as widely separated as any two fields of human endeavor could well be, but when we begin to delve a little deeper we find this is not true. Many of the problems of each branch are concerned with respiration and the behavior of gases in the tissues. For instance, when a diver is brought up too rapidly from a depth of 200 feet we expect to see some of the same

symptoms that may occur when an aviator flies his machine to a height of 20,000 feet in eight minutes. They are the same phenomena, governed by the same laws, but at opposite ends of the axis.

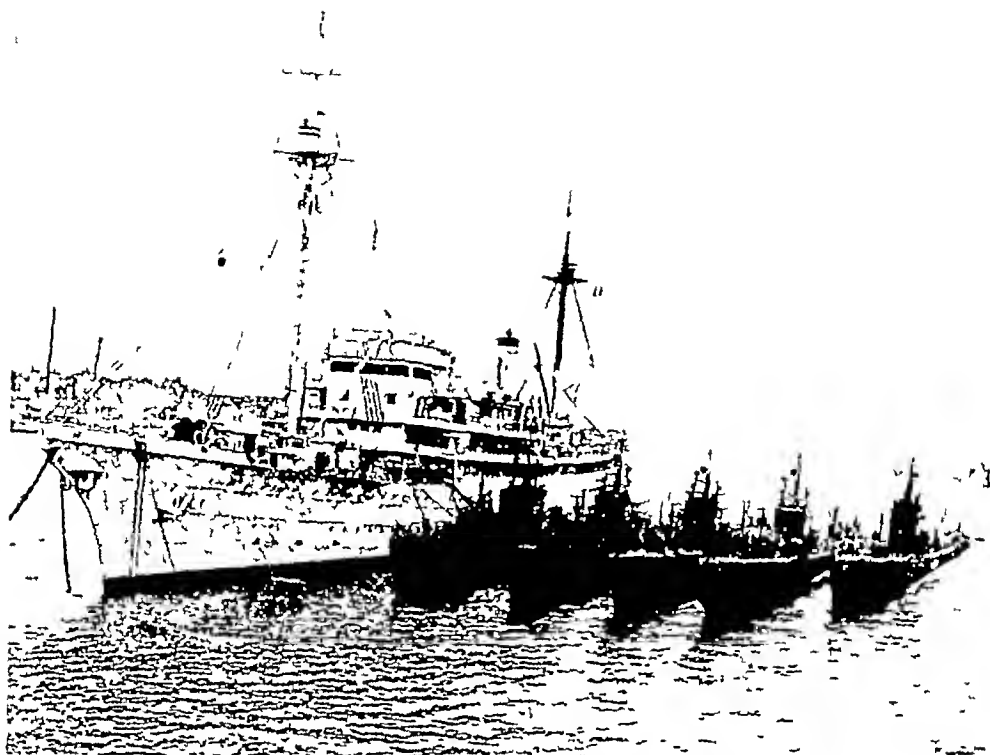
Life in Submarines

Many of the implements of war that we are accustomed to regard as modern were first successfully employed in the American Civil War, among these was the submarine. There had been much experimentation with underwater craft, but little was known of them until the Confederate submarine "Hunley" sank the Union corvette "Housatonic" off Charleston, South Carolina, in the night of February 17, 1864. Since then there has been the rapid development with much of which you are probably familiar (Fig 1).

Few people realize the dangers, discomforts, and difficulties under which submarine crews work. Necessary limitations of weight and space forbid many features that are desirable for safety and comfort. The quarters are cramped, storage space is limited, meals are irregular because of the inconvenience of preparing and serving food, bathing and toilet facilities are reduced to the minimum, and the same air must be breathed over and over while submerged. Only the hardest and most alert men can continue to carry on with their arduous work day after day under such conditions. The crews are necessarily small, and each man has to perform duties that are essential to the safety of all. Therefore, it is necessary to choose men for submarine work with the greatest care.

The process of selection begins at the recruiting office. Out of every 100 young men who apply for enlistment in the Navy, only 11 are able to satisfy the

* Illustrated by slides and moving pictures.



Official Navy Photo

FIG 1 Submarines and mother ship When in port most of the crew eat and sleep aboard the tender

mental and physical requirements and to last through the period at the training station. Of those who survive this strenuous trial, as many as 25 per cent may fail to qualify in the course of submarine training. The medical officer has the task of weeding out those with chronic respiratory tract infections, mental instability, faulty teeth, and a host of other disabilities that might cause a man to fail at a crucial moment. The margin of safety in a submarine is very small, and a few moments of inattention on the part of a man who is physically ailing may cause the loss of ship and crew.

The period of submergence is limited not so much by considerations of material as by the mental and physical endurance of the personnel. For men to live and work in a closed space, such as a submarine, it is necessary to provide an

adequate supply of oxygen, to remove carbon dioxide, and to provide a wet bulb temperature not over 75 F.

A man at rest requires about 250 cc of oxygen per minute or about 750 cubic feet in twenty-four hours. When hard work is performed this amount is increased many times. Therefore, the men are trained to perform their duties smoothly and with the least possible effort so that oxygen may be conserved. Rebreathing air for prolonged periods has been found to be safe if new oxygen is supplied to replace that used in the body. There do not appear to be any cumulative poisons added by respiration other than carbon dioxide.

At present it is customary to carry enough oxygen in submarines to last the crew of 40 to 60 men about seventy-two hours.

Dangers of Anoxemia

When the percentage of oxygen falls from the usual 20.9 to about 15 per cent, the average person begins to feel the first symptoms of anoxemia. A somewhat greater tolerance can be developed by training, but anoxemia is a most insidious and dangerous condition. Even an experienced hand may have as the first symptom a delighted and devilish feeling of exuberance, like that we all hope to get from alcohol. Such a reaction in a key man, with distortion of judgment and an insane conviction of his own infallibility, may be a serious menace to the safety of the ship and its crew, so every precaution is taken to avoid this danger.

Anoxemia developing in this way is, of course, identical in its symptoms with that seen in certain diseases such as pneumonia, or with anesthetics, such as nitrous oxide, that act by reducing the availability of oxygen. It is a problem common to aviation and deep diving. Loss of consciousness may occur quite suddenly, or there may be loss of memory or reasoning power with emotional outbursts and muscular incoordination. The highly specialized nervous tissues of the brain and spinal cord require twice as much oxygen as other tissues, and they are the ones most affected by the lack of oxygen. If it be prolonged, curtailment of oxygen may cause widespread and permanent damage to the central nervous system.

A recent article by Colonel Grow,¹ of the Medical Corps of the Army, brings to our attention the fact that these same symptoms of anoxemia may follow exposure to severe cold. This is probably due to two causes: first, the oxygen-carrying power of the blood is reduced, and second, the ability of the chilled tissues to take the available oxygen from the blood is lowered. This result of prolonged exposure to cold may be observed in aviators, in crews of submarines operating in cold waters, and in divers who must remain immersed for long periods in water near the freezing point.

Carbon dioxide must be removed from

rebreathed air. A man puts out slightly less carbon dioxide than the oxygen he absorbs because some of the oxygen is used in various ways in the body metabolism. In submarine operations the amount of carbon dioxide is carefully controlled and is not allowed to rise above 3 per cent, even though no symptoms would usually be felt until it rose above 5 per cent. The familiar feeling of drowsiness with headache is quickly recognized as an early symptom. Modern carbon dioxide absorbents are many times more efficient than the soda lime that was formerly used, and removal of this gas is easily done.

Modern air conditioning of submarines has greatly reduced the discomforts under which the crews live and work. Circulation of the air and removal of the excess moisture are the principal features. A wet-bulb temperature of about 60 F appears to be ideal, and it should be kept below 75 F, for when it goes above that point there is rapid increase in discomfort and decrease in efficiency.

I well remember the first time I went down in a submarine—more than twenty-five years ago. It was hotter inside the ship than grandfather's attic on an August afternoon. The dim carbon-filament lamps gave everybody a ghastly, lemon-yellow color, which exactly reflected my feelings. The smell of oil was nauseating until it was overwhelmed by the more unpleasant body odors. A few minutes after the hatches were dogged down our clothes were saturated with perspiration, while moisture dripped from every metal surface. It was a great contrast when I recently visited one of the latest models. The air was dry, fresh, and invigorating. The only odor was that of good navy chow, which was being prepared on shining electric stoves. To accomplish this there was general air conditioning, and the dehumidifying apparatus removed as much as 5 gallons of water an hour from the air.

Rescue Apparatus

There are several types of devices that are designed to aid in saving the lives of men who are imprisoned in sunken submarines. The common ones are the lung, which is worn by the individual man, and the rescue chamber, which is a submarine elevator capable of carrying 8 to 10 men at a time.



Official Navy Photo

FIG 2 Rescue lung

- | | | | |
|---|-----------------------------------------------|----|---------------------------------|
| 1 | Nose clip | 9 | Oxygen inlet valve. |
| 2 | Shut-off valve. | 10 | Breather bag |
| 3 | Rubber mouth piece. | 11 | Chains for holding down clamps. |
| 4 | Metal mouth piece (housing) | 12 | Holding down clamps (trousers) |
| 5 | Inhalation tube. | 13 | Oxygen hose. |
| 6 | Exhalation tube | 14 | Belt strap |
| 7 | Canister filling cap (canister inside of bag) | 15 | Shoulder strap |
| 8 | Air chuck on oxygen hose | 16 | Relief valve (flutter) |

The lung (Fig 2) consists of a rubber bag filled with oxygen at the pressure under which the man starts his ascent. It contains also a canister of carbon-dioxide absorbent. The man breathes the oxygen from the bag and exhales through the canister. The amount of oxygen supplied is sufficient to last a man about forty minutes. He goes up a line that is knotted at certain distances, and he is taught to decompress himself by stopping at each knot for a definite number of breaths. In tank experiments, ascents have been made from a simulated depth of 300 feet.

Practice in the use of the lung is a part of the training for all men of the crews of submarines (Fig 3). It has been found that men who are temperamentally unfit for submarine duty are automatically weeded out by the lung training. Several deaths have occurred while practicing with the lung, one while ascending from a depth of only 15 feet. Dr Behnke,² of the Medical Corps of the Navy, has demonstrated the mechanism of such deaths. The excessive pressure when the man fails to carry out his instructions and holds his breath may force the air through the pulmonary circulation into the blood stream and cause air embolism. This same phenomenon has occurred in trombone players.

The rescue chamber (Figs 4 and 5) was developed by members of the Navy's Experimental Diving Unit, and it had its first practical test when the U S S "Squalus" sank in 240 feet of water in May, 1939. Thanks to this device, all of the 33 living men were rescued. It is a steel chamber, 7 feet in diameter and 10 feet high, divided into an upper closed compartment and a lower, open one. They are separated by a bulkhead that has a watertight hatch. In the lower compartment is a reel of wire driven by an air motor. When the chamber is to be lowered, a diver goes down to the submarine and attaches a steel cable to the eye on the escape hatch. The chamber is then placed in the water with just enough buoyancy to keep it afloat. The motor is started and reels in the steel cable, pulling the chamber down to the submarine where the lower rim of the chamber is firmly seated on the hatch. The water is then blown out of the lower compartment and the hatch opens to allow the men to

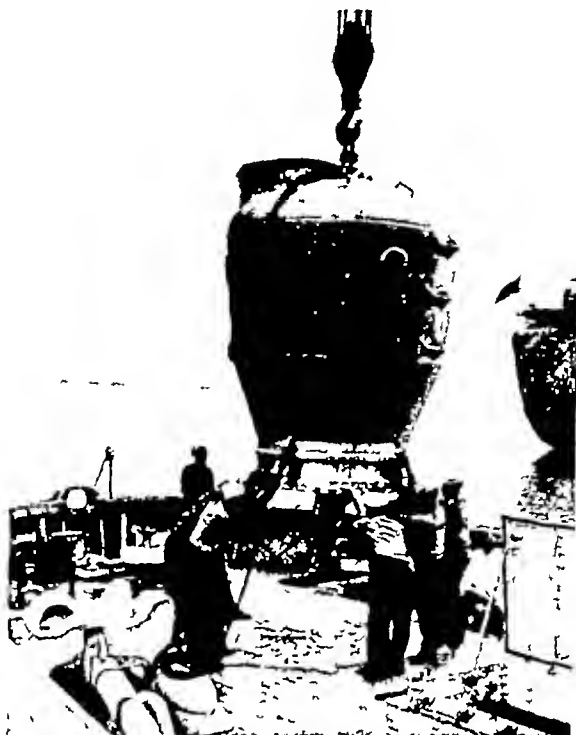


Official Navy Photo

FIG 3 Tower for training in diving and submarine rescue work. Any depth of water, up to 100 feet can be arranged.

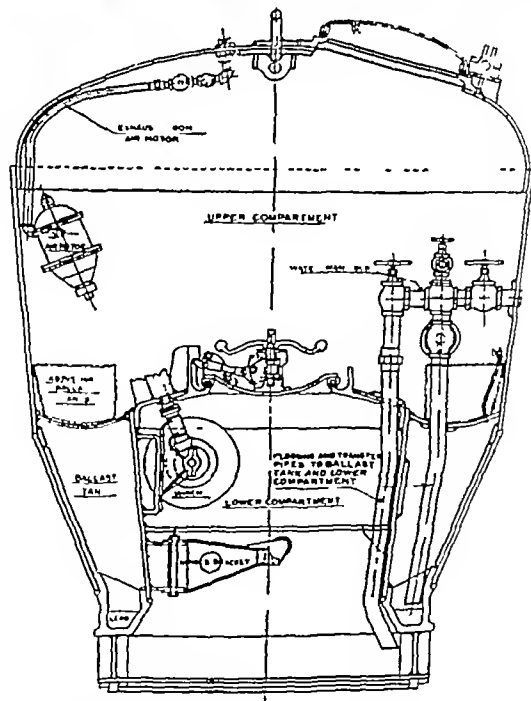
ascend from the submarine to the upper compartment. The chamber is then pulled to the surface, and the men leave through a hatch in the top of the chamber. In the "Squalus" rescue 9 men were carried at a time, in addition to the 2 who descended in the chamber to operate its mechanism.

Such a complicated device is likely to develop kinks the first few times it is used, and there was a most dramatic episode during the fourth trip of the rescue chamber, which may be an old story to you all. The last 8 men entered the chamber, and it started its slow ascent. Ten minutes later, with only 150 feet to go, it came to a jarring stop. The downhaul cable was jammed on the reel. Efforts to free it were unsuccessful, and an hour and one-half later the chamber lay on the bottom while divers worked to rig new wire. Ten men were imprisoned in a narrow steel cylinder, 240 feet below the surface. Those on the tender above were terrified. It was nearly midnight, and the sea was growing rougher. As the vessel rolled and pitched a great strain was thrown on the cable which held the chamber. One by one, its strands began to part. Divers who went down to bend on a new wire were fouled in the snarl of loose strands and were unable to finish their job. A remarkable feat



Official Navy Photo

FIG 4 Submarine rescue chamber



Official Navy Photo

FIG 5 Cross section of rescue chamber

was accomplished when a diver was able to find the downhaul cable in the dark and sever it with the underwater cutter. Then, as a last desperate resort, it was decided to try pulling in the cable by hand, with the hope that it would be possible to get the stranded portion aboard before it parted. Foot by foot the wire came aboard, and at last the loose strands appeared above the water. The men carefully eased it aboard until they could get a secure hold on the good part, and the battle for life was won. More than four hours after entering the chamber the last of the survivors stepped aboard the tender.

This rescue could not have been accomplished without the aid of several new mechanical devices and perfect discipline.

Diving Problems

In the British Museum is a bas-relief carved by an unknown Assyrian sculptor in the temple at Ninevah nearly a thousand years before Christ. Its meaning has long been a source of heated controversy. One group contends that it represents a diver taking down with him a goatskin full of air to breathe. Another school of thought interprets it as a warning showing death by drowning to be the appropriate punishment for those who play on bagpipes. Whatever the decision may be, and we don't intend to sit up for it, there can be little doubt of the extreme antiquity of diving with mechanical aids.

Legendary figures of the past were credited with the ability to stay under water for periods of one to four hours without any mechanical assistance, but the best modern record for holding the breath is given by Haldane and Priestly³ as fifteen minutes and thirteen seconds, after deep breathing of oxygen. Naked divers go to depths of 120 to 130 feet, but their stay is so short that not enough nitrogen is dissolved in the tissues to cause serious damage, and they may escape the bends for long periods. The danger increases with repeated dives, especially if the rest periods are short. When mechanical devices that permit the diver to go deeper and to remain down longer are employed, the dangers rapidly multiply.

The modern diving dress has undergone

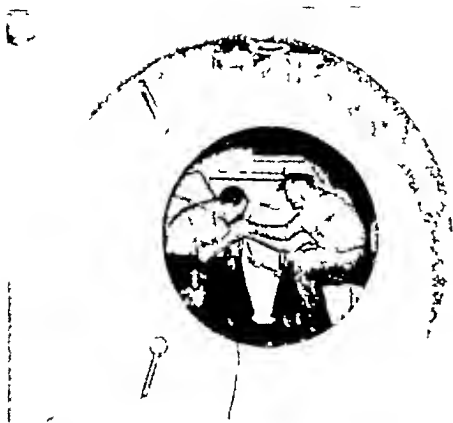
little change since Augustus Siebe, in 1837, demonstrated his new, closed type. This has increased the safe working depth for divers, but it has also greatly increased the associated problems. During the salvage and rescue operations that followed the sinking of the U S S "Squalus," nearly seven hundred dives were made under conditions that required the development of many new methods and devices. Successful solutions of most of those problems were found, and they point the way to safe diving at much greater depths. We may soon have divers working with safety at depths of 400 to 500 feet.

The principal dangers to divers that interest the medical man are asphyxia from insufficient air supply, blowing up to the surface, falling or being squeezed, and caisson disease or bends.

Asphyxia is rare when modern apparatus is used with lines and hoses skillfully handled. Unconsciousness from excess of carbon dioxide occurs occasionally, but it usually disappears as the diver is brought to the surface. The effect of carbon dioxide is in direct proportion to the pressure, and as the pressure is reduced the carbon dioxide effect disappears. Three per cent of carbon dioxide may be permissible at the surface, but at a 100-foot depth its effect would be multiplied four times and the symptoms would become serious. The diver would become unconscious and remain so until he approached the surface.

Blowing up may occur when the normal escape of the excess air from the diving dress through the outlet valve is prevented in any way. The diver frequently manipulates this valve to accommodate himself to the requirements of his work. If not skillfully controlled, the pressure within the suit may increase until the buoyancy is so great that the diver rises rapidly to the surface. Aside from the danger of injury by striking the tender or becoming fouled, there is the effect of sudden reduction of pressure when he is released from his diving dress.

The former method of treatment was to send the diver down again to the depth



Official Navy Photo

FIG 6 Looking into the decompression chamber

from which he had been blown up, and then put him through the regular stages of decompression. If a man were seriously injured, he might be placed in jeopardy from his wounds if he were sent down alone in his diving dress for an hour or more of decompression, and there might be equal danger of permanent disability from bends if he were not sent down. That dilemma is mercifully avoided now by the use of the compression chamber (Fig 6). The man is brought aboard, placed in the chamber with the doctor or other attendant if necessary, and the pressure is rapidly raised. There he can be kept warm, fed, and receive whatever treatment is necessary while undergoing decompression. Blowing up occurred several times during the salvage of the "Squalus," but thanks to skilful handling, no permanent damage was sustained by any of the men.

Falls under water are very dangerous, especially when they occur at a moderate depth, because the air pumps cannot raise the pressure within the suit quickly enough to compensate for the outside pressure. For every 33 feet of increase in depth, the pressure will increase by 14.7 pounds per square inch. Suppose a man working near the surface falls 30 feet, the pressure will suddenly increase by nearly a ton on every square foot of his body. This irresistible force will crush his body

into the rigid helmet, causing serious injury or death. The greater the depth at which he is working, the less serious are the results, but a fall through even a moderate depth may cause serious hemorrhage from the nose or lungs.

Bends

Caisson disease or bends has been known for centuries as a serious hazard of diving. All through the ages it has been recorded that divers suffered tormenting pains, that they were blinded or paralyzed, and that many died. Several explanations of the cause of bends have been proposed, but since 1912 there has been general acceptance of the conclusions reached many years earlier by Bert.⁴ He showed that the pathology and the symptoms were due to saturation of the tissues by nitrogen under pressure. On this basis decompression tables have been worked out for different depths and times of exposure. When they are carefully followed, the danger of bends is almost completely eliminated.

The etiology of bends reduced to its simplest terms is this: A man's body consists of about 80 per cent water, 15 per cent fat, and 5 per cent of solids—mostly bone. Fat and water will absorb definite amounts of the gases that constitute the air, and these amounts vary directly as the pressure. When a man breathes compressed air the gases are carried to the various tissues by the blood in the proportion of their partial pressures. The oxygen is used in tissue metabolism, but the inert nitrogen remains and gradually saturates all the tissues at the increased pressure.

If the pressure is then gradually reduced, as in stage decompression, the nitrogen is again taken up by the blood stream and given off through the lungs with no harm done. But if the pressure is reduced too rapidly for the tissues to get rid of their nitrogen, it forms bubbles either in the tissues or in the blood stream. The bubbles may act as emboli or may exert harmful pressure on delicate tissues. The volume of a gas varies inversely as the pressure, and so, in ascending from a depth of 200 feet to the surface, a bubble of nitrogen would expand to six times its original volume. This expansion within the tissues produces the pathology and symptoms of bends. Until recently, nitrogen was the only gas known to act in this way in the body, but, since experiments in the use of helium for diving have been

carried on, it has been found that this gas is also capable of causing bends through the same mechanism

The presence of gas in tissue has recently been demonstrated by the x-ray,⁵ and this is the first time, so far as those authors could discover, that the cause of the disease has been proved in this way. Their case is not entirely clear, for, with this amount of gas in the region of the knees if it were caisson disease, there must have been equal amounts in other parts of the body, especially the spinal cord, and there should have been extensive paralysis and areas of hyperalgesia. The symptoms would not have been limited to the region of the knees. Could it have been a case of traumatic emphysema?

There is an element of time as well as of depth in the development of bends. Nitrogen being an inert gas, saturation occurs slowly, and more than an hour would be required to saturate all tissues of the body at any degree of increased pressure. The reverse is also true. Desaturation occurs slowly, and the ascending diver must be held for considerable intervals at several levels so that the dissolved gas may be gradually taken up by the blood and brought to the lungs, whence it escapes from the body. The formulas for computing the rate of ascent of a diver are rather complicated, and there is no need to go deeply into them here.

One salient point is that the ascent may last several times as long as the useful part of the dive. After staying the safe period at the working level, the diver may have to remain more than an hour in the dark, icy water before he can be surfaced. This is a costly matter to the employer and an unpleasant one for the diver, so there is a constant temptation to cut short the time of ascent. Hence, we still have cases of bends, and several states have found it advisable to pass laws which stringently control the decompression of divers.

One means of improving the conditions of the ascent has been the development of

the compression chamber, of which there are two principal types. The submersible chamber is lowered from the tender to the depth where the diver would make his first stop for decompression. He enters the chamber where the attendant removes his helmet and raises the pressure to the desired point. Decompression is then carried on in relative comfort. The fixed type of rescue chamber is located on the tender or on the dock. When the diver has finished his time on the bottom he is brought rapidly to the surface, undressed, and put in the chamber for decompression. These chambers have greatly reduced the discomforts of the diver and have made it possible for the doctor to enter the chamber with the man to administer any necessary treatment in cases of emergency.

Research Problems

The research workers of the Navy's Experimental Diving Unit have made extensive studies of the value of pure oxygen, argon mixtures, and helium as substitutes for air in diving. It was found that mixtures in which argon predominated would induce greater stupefaction and neuromuscular impairment than when air was used. This effect quickly disappeared when air was substituted for the argon mixture.

When pure oxygen was used, it soon became evident that there is a definite limit to the amount of oxygen under pressure that the body can stand, and this should be remembered when the oxygen tent is used. When this limit is passed, there may be muscular twitchings, mental instability, or even convulsions. No serious results were observed after breathing pure oxygen for several hours at normal atmospheric pressure.

Helium mixed with oxygen was found to have very definite advantages over air as a respiratory gas for deep diving. It has definite disadvantages also, which are largely due to the fact that it is a much lighter gas, only one-seventh the weight of nitrogen. The use of helium-oxygen mixtures in the proportion of four to one is

now considered to be a major advance in the technic of diving. The diver using air frequently experiences mental dullness and confusion to such a degree that he is unable to accomplish any work, and the dive may be completely wasted. With helium, his head remains clear even at pressures equal to a depth of 500 feet. He can also work harder and longer without undue fatigue. Decompression time after long exposures is considerably reduced when helium is used, but the use of this gas does not in any way reduce the danger of bends.

A recent and most important advance in the field of diving has been the employment of pure oxygen for the prevention and treatment of bends.⁶ Its use in the compression chamber allows the escape of nitrogen or helium from the body much more rapidly than when air is used. To permit economical use of oxygen in the chamber, Boothby's apparatus has been tried and found most successful. This also minimizes the fire hazard, which would be excessive if the whole chamber were filled with pure oxygen. When bends have actually developed, the method has been adopted of raising the pressure in the chamber until all symptoms are relieved and then adding one atmosphere more, or a minimum of 45 pounds to

the square inch. Most patients respond promptly to the restoration of pressure.

I have indicated briefly the trend that the research of today is following in the problems of diving and submarines. It will be observed that most of the problems are in the field of physiology, especially of respiration and the interchange of gases under pressure in the tissues of the body. Many of the questions concern activities peculiar to the Navy, and the research workers of the Navy will have to solve them. Others are of general physiologic interest. Research is constantly growing in scope and importance. Industrial and military organizations are devoting millions of dollars and many of their best minds to technologic problems that were unknown a few years ago. The Medical Department of the Navy is well aware of the demands for additional knowledge in many fields of its activities and is preparing elaborate plans for further research.

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SOME SUGGESTIONS FOR 'MEDICAL PREPAREDNESS'

The *Connecticut State Medical Journal* suggests that in our medical preparedness program some such plan be evolved in this country as now exists in England, where a central war committee representing all branches of the medical profession has been set up under governmental plans. To this committee the government refers all questions regarding the supply of medical personnel arising out of the war. It satisfies the demands for this personnel both for the civil population and for central and local government authorities. Local medical war committees scattered over all England are consulted by the central committee before a practitioner is allocated for national service, thus enabling the maintenance of a sufficient quota at home according to the density of population and proportion of physicians practicing in any area. Specialists are allocated in the same manner, qualifications and experience being investigated before appointment. No practitioner is allocated to the services without his consent.

With the lowering of the mortality rate

throughout our nation, it is only to be expected that in the event that the present European war engulfs us in its tide more attention by the Medical Corps will be given to prevention of disease in the Army. New advances in chemotherapy may yield large returns. Canada is planning to give every Canadian soldier wounded in battle an injection of sulfanilamide at the earliest possible moment. Blood transfusions and early closure of wounds will play a major role in the present conflict. Blood banks bid fair to become standard equipment in base hospitals. Already the entire Canadian army has been inoculated with tetanus toxoid. We find the medical profession and the army medical services of Canada working in close cooperation. As in England, no communities will be stripped of physicians and no physician will be named to important army posts on military qualifications alone. The Medical Corps of the United States Army has a full-sized task ahead. There should be many trained physicians ready and waiting to accept reserve commissions.

GENERAL MEDICAL PROBLEMS IN AVIATION

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WITHIN the past year the general medical profession has become acutely aware of the fact that there exists a specialty known as aviation medicine. Further than that, physicians have become even more acutely aware of the fact that there is a rapidly growing need and demand among them for information in this interesting new field. This development has come about partly through the recent marked expansion of civil aviation with the consequent participation of large numbers of our civil population in flight and partly because of the disturbed international situation with the possibility that large numbers of civil physicians may suddenly be called to serve with our air force in a national emergency.

The above conditions have come about so abruptly that the average physician has had little or no opportunity to realize the extent of the medical problems in aviation or to realize that he will no doubt soon be called upon to deal with them. In order that this proposition may be more clearly defined let us examine the present and probable future state of civil aviation and the obligations that must be assumed in this field by the general profession.

January 1, 1940, there were 31,000 licensed civil pilots in this country with about twenty thousand more in training. By July 1, 1941, it is estimated that the number of licensed civil pilots will be increased to 100,000 and by July 1, 1943, to 200,000.

While we are inclined to think of aviation medicine in terms of airplane pilots, it must not be forgotten that it applies to passengers as well, for obviously both are subjected to exactly the same effects since both are exposed to the same conditions. Therefore, to the pilots mentioned above

we must add the number of passengers carried by air. In the past year this number amounted to 3,500,000 and represents an increase of 43 per cent over that of 1939. At this rate of increase within the next five years we may expect that over 20,000,000 of our population may be transported in scheduled and unscheduled air-transport operations each year.

A third group in our civil population with which we are concerned is composed of those young men and boys who wish to take up aviation as a career. A recent comprehensive survey of this group showed that nine out of ten chose flying as their first preference for an occupation. This percentage represents about ten million individuals.

Thus, altogether in this country today, there are approximately 14,000,000 persons directly interested or engaged in flying activities, and it is contemplated that within five years this number will be increased to well over 30,000,000. With the above data in mind let us next inquire as to the kind of problem that this development presents to the general medical profession and also its extent.

In 1926 the Bureau of Air Commerce of the Department of Commerce was established for the control of civil aviation and was later supplanted by the Civil Aeronautics Authority. The medical section of these agencies grew rapidly as civil aviation expanded, and at the present time it requires the services of approximately 760 civil physicians. In addition most of the major air lines have established their own medical departments and hence have created many openings for other qualified civil physicians, since it is forbidden that one physician serve both the Authority and another civil agency.

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Although the total number of qualified flight surgeons in this country is relatively small, there is a most unusual seriousness of purpose among them as evidenced by the fact that they have their own medical association, publish and read their own medical journal, and attend their own annual medical convention. At the present time the supply of trained civil flight surgeons in this country is equal to only 20 per cent of the demand, and there remain a large number of opportunities for those who can obtain the necessary training and experience in this field.

The employment of examiners by the Civil Aeronautics Authority and the airlines might lead to the conclusion that the medical problems of aviation are adequately cared for and that nothing of interest or importance remains within the scope of general medicine. To show that this assumption is false it is but necessary to point out that civil flight surgeons are charged only with the selection of pilots and their periodic examinations. They are neither responsible for the pilots' clinical care nor officially responsible for the supervision or clinical care of those passengers who travel by air.

As a consequence of this situation the licenses of civil pilots, and in most instances their means of livelihood, depend on the proper maintenance of their mental and physical health under the supervision of the family physician. In aviation the term physical fitness has a special significance. Naturally health is included in its general meaning but is by no means synonymous with it. Perhaps this last statement can best be emphasized by pointing out that a candidate for an airline pilot's rating may be free from all acute disease processes, have no obvious gross physical defects, be capable of engaging in most other occupations, and yet have over one hundred disqualifying defects for flying. While it is true that many of these so-called defects have no great clinical significance, they have been found important in aviation and must be taken into consideration in any program of medical care if that program is to be a success.

In addition to the clinical care of pilots the general medical profession is also responsible for all clinical matters with reference to civil air passengers. This is not to imply that modern air transportation is dangerous to life, for it is not. It does mean, however, that great numbers of our population are being exposed to new unnatural conditions, however subtle they may be, which may affect them adversely under certain circumstances. To the uninformed the problems may appear to consist principally of caring for those injured in crashes. This is not true, however, because the number of such cases is practically nil and because the medical problems of air transport arise principally as a result of the aerial environment.

Probably the most frequent difficulty experienced by passengers in flight is with reference to the middle ear. The middle ear is an air-filled cavity ventilated through the eustachian tube. Under ordinary circumstances the eustachian tube is collapsed with its walls in apposition and is open only during swallowing, yawning, and other physiologic acts. As a consequence, during a change of altitude, either a positive or negative pressure builds up in the middle ear unless the eustachian tube is voluntarily opened. If for any reason the eustachian tube is stenosed, which may occur from a mild coryza or pharyngitis, the middle ear cannot be ventilated, and a marked change of altitude may then rupture the ear drum. A like condition occurs with reference to the sinuses when their openings are blocked, in which case, during a change of altitude, marked trauma and severe pain may develop.

The second most frequent condition developing in airplane passengers is airsickness, which is identical in etiology and symptomatology with seasickness and thus requires no further description here.

A third condition that may develop in airplane passengers is anoxia. During ascent to high altitude the pressure of the atmosphere decreases, and consequently there is a decrease of the partial pressure of the oxygen in the inspired air. This results in a lowering of the oxygen satura-

tion of the arterial blood, a lack of adequate oxygen in the tissues, and a chain of symptoms ranging from mild headache and fatigue at about 8,000 to 12,000 feet to unconsciousness and death at about 25,000 feet

Another condition that may occur in passengers is abdominal distention, since the gastrointestinal gases expand in direct proportion to the decrease of atmospheric pressure during ascent

Since the above-mentioned effects may occur in normal individuals, it is obvious that those suffering from various pathologic states may be even more adversely affected. Thus, any inflammation or infection of the middle ear or the nasal accessory sinuses may be aggravated by flight. Expansion of the gastrointestinal gases or the vomiting of airsickness will, of course, affect those with hernia, recent abdominal operative wounds, gastric or duodenal ulcer, acute or chronic appendicitis, or obstruction of the intestinal tract. Those individuals suffering from cardiovascular or respiratory diseases should fly only at reasonable altitudes except on advice of a physician who should determine whether or not the condition concerned is dangerous under moderate degrees of anoxia

An entirely different problem is that concerning the 8,000,000 or 10,000,000 young men and boys who sincerely want to take up air-line or military aviation as a career. Most of these young men consult their family physicians before appearing for their official flying examinations to determine whether or not they are physically fit to fly and to institute remedial measures for any correctable defects they may have. In the past this procedure, unless the candidate happened to be fully qualified for flying training, has usually led to a long chain of most unfortunate circumstances because the average physician lacks complete understanding of the physical and mental requirements for aviation. As mentioned above, good health and fitness for flying are not synonymous. As a consequence a good clinical examination is not necessarily a good aviation examination, and

the former is never adequate. Because he has had a favorable clinical examination, many a young man has spent much time and money preparing for a career in aviation, and then failed his official examination for flying. This invariably leads to a recitation by the candidate of his examination by the family physician, the wasted time and money to which he has been subjected, and invariably an accusation of incompetence against the official examiner. The latter in defending his action can, unfortunately, leave no other conclusion in the mind of the candidate but that it was the family physician who was at fault.

These various general medical problems of aviation have created an educational need, which most of our medical schools have as yet made no attempt to meet. In this respect they have lagged behind the medical schools of Europe and especially those of Germany where, for the past two years, aviation medicine has been taught to every student as a regular part of his medical education. The growing need and the growing demand for such instruction in this country have, however, not been entirely without results. The first step in this direction has already been taken by the George Washington University School of Medicine, which presented a postgraduate course in aviation ophthalmology and aviation medicine in April of this year, and at least two undergraduate schools have recently introduced lectures in this subject to their junior and senior classes. With this encouraging beginning it does not seem unreasonable to assume that all of our undergraduate medical schools will eventually provide their students with regular courses of instruction and that other postgraduate courses in aviation medicine will be presented as rapidly as conditions permit.

Turning now to a consideration of our military needs in aviation medicine in the event of a national emergency, we find ourselves confronted with a unique situation. As is generally known the defense of this country is based on the principle of the citizen army. In the event of war thousands of civil physicians and tech-

nical specialists in the medical sciences would be called into service for duty with the army. In our Medical Department war-time tables of organization there are listed about 290 different specialist categories that are expected to be readily filled by individuals who have already been trained in that specialty in civil life. At present the one important exception to this availability of sufficiently trained personnel is in aviation medicine.

All of the major conflicts since the last World War have demonstrated the fact that the air arm is not only the first to be engaged but that it is likely to be the deciding factor in any struggle. This means that the air arm must be at full strength in men and materials at the beginning of hostilities and remain so until hostilities have ceased. While the difficulties of mass production of aircraft are generally known, few persons realize that the mass training of pilots is even a more difficult one. It must also be remembered that the initiation of pilot selection and training must await the organization and training of properly qualified medical personnel. If this vital function is to be properly performed, the necessary number of civil physicians must be selected, organized, and trained before an emergency exists. At the same time it must be remembered that the present-day air force is not, as it formerly was, a small auxiliary arm of the service but is of major importance and size and, consequently, requires a much larger complement of medical personnel than heretofore. For this reason alone, if for no other, a large number of civil physicians should familiarize themselves with the fundamental principles of aviation medicine to the extent that is necessary for our national defense.

Means for accomplishing this are provided by the Army Medical Department through courses of instruction to medical reserve officers and medical officers of the National Guard at the Army Air Corps' School of Aviation Medicine at Randolph Field, Texas. Evidence that this course is popular with eligible officers and that our military problem in this respect will eventually be solved is indicated by the

fact that over three hundred officers have already graduated from this school and about six hundred more are currently under instruction.

Military aviation medicine involves a complete medical service for flying personnel, which for descriptive purposes may be divided into four distinct categories.

The first of these is the selection of candidates for flying training. This is accomplished by means of an examination that is not only thorough but requires special equipment and employs special techniques. In addition to the physical examination there is a study made of the total individual in relation to his aptitude for military aeronautics, requiring not only an accurate insight into the individual's immediate personality and emotional and mental makeup but also an estimation of his ability to tolerate the stresses of military flying throughout the balance of his active life.

The second type of medical service employed in military aviation is that generally known as the "care of the flier." That airplane pilots require special medical supervision first became apparent in 1917 and was a direct cause of the flight surgeon being created. When an American aviation medical mission went to visit Europe in 1917-1918 to study aviation medicine at the allied fronts, they were at once struck by the care, or rather the lack of care, of flying personnel. This lack of care did not exist in the ordinary sense of the word but consisted of a lack of the special care that the mission felt was needed. They noted that pilots who were active at the front deteriorated very rapidly and that nothing was being done to investigate this condition or to prevent it. They soon became convinced that pilots in the various air services were being subjected to stresses and deleterious environmental influences which were not properly understood or fully appreciated. They also reached the conclusion that flying personnel was reluctant to seek medical attention for fear of being considered lacking in courage. On returning to the

United States, the mission recommended that selected medical officers be given a course in aviation medicine and assigned to American flying units. These specially trained officers were to study the effect of flight on the pilot, act as his confidant and adviser, and also act as an intermediary in medical matters between the flyer, his commanding officer, and higher medical authority. This recommendation was put into practice and immediately became a decided success, raising the morale and efficiency of the flying personnel and at the same time reducing the accident rate. Since that time this practice has been continued and is today the essence of aviation medicine.

In addition to this special care, flying personnel also receive the necessary clinical care, and military pilots as a class undoubtedly have the benefit of preventive medicine developed to its highest degree.

The fourth type of medical service in military aviation has to do with investigations of the effect of flight and of the aerial environment. Because of the nature of their flying, military pilots are subjected to conditions that are restricted only by their psychologic and physiologic limits. Recent studies have revealed a number of new clinical conditions that, added to those that were known before, furnish us

with a formidable list of occupational diseases peculiar to flying under extreme conditions of speed and altitude. These conditions have been described in detail elsewhere in the literature and are too numerous and involved to allow discussion here.

Summarizing now what has been said before, we find that aviation medicine in civil life has definitely become established as a medical specialty and that there is at present a marked shortage of properly trained men to supply the demand in this interesting new field. In addition we find that many medical problems of aviation are a direct responsibility of the general medical profession and that the profession and our medical schools have not as yet had opportunity to meet their obligations in this respect. The ultimate solution to this problem appears to be the introduction of this subject into our regular and postgraduate medical schools, which will not only furnish the necessary instruction for those who wish to specialize in this field but will fulfill the educational needs of the general profession as well. This procedure will likewise help to solve our present problem of a lack of trained reservists in aviation medicine, which would be most acute in the event of a serious military emergency.

PATERNITY

The *Detroit Medical News* calls the attention of the medical profession to a written opinion rendered by Judge Henry G. Nicol in the Wayne County (Michigan) Circuit Court on February 14, 1940. The case was one in which an unmarried man was accused of being the father of a child. Blood tests were requested and the following results were obtained by Dr. Arthur W. Frisch of the Wayne University College of Medicine: The defendant belonged to the blood group AB type N. The complaining witness belonged to the blood group O type N and the child to blood group O type MN. In the above mating the property A or B should have appeared in the blood of the offspring and the factor M should have been lacking. On the basis of these findings Dr. Frisch testified that the defendant was not the father of the child. With regard to the above testimony Judge Nicol says: "In addition to the testimony offered by the defendant, we have the testimony of the physician relative to the blood tests to which the Court has given close attention. This expert testimony, while it cannot be received as being absolutely

accurate, must be recognized as reliable insofar as the elimination process is concerned in the vast majority of the cases. For this reason I am inclined to the opinion that this testimony brings the defendant's testimony to a weight equal to that offered by the People if it does not outweigh the latter. This would result in the failure of the People to establish their proofs by a preponderance of the evidence, which they are called upon to do. The Court has, therefore, reached the conclusion that the People have failed to establish a case against this defendant, and, therefore, finds the defendant herein not guilty of the charge made against him."

The above decision wherein blood tests have been accepted as evidence without previous statute serves to establish a precedent for the State of Michigan and ought to encourage the use of the tests in other cases of disputed paternity," says the *News*, which adds: "This work of Doctor Arthur W. Frisch on blood grouping is most commendable and Wayne University College of Medicine is honored in having a doctor of his ability on its faculty."

NOISE IN RELATION TO HEARING AND EFFICIENCY

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NOISE may be defined as any unpleasant or disturbing sound the elimination of which would be desirable. Noise is sound of too short duration or of too complex a character to be analyzed or understood by the ear. Noise is sound that forces unwilling attention, that causes an unpleasant emotional reaction, and that gives one a distinct feeling of relief upon cessation.

In the Navy we are turning our attention to the problem of noise as it affects hearing and efficiency of personnel. The operation of modern warships as a result of mechanical developments has become so complicated that the limiting factor in maneuvers is human fatigue. It is realized that the outcome of a modern naval engagement may depend not so much in superiority of armament but in the ability of men to maintain a high plane of efficiency under grueling battle conditions.

It becomes imperative, therefore, for the naval medical officer to consider every means of increasing efficiency. Our problem belongs to the field of preventive medicine, and although efficiency in the sense of greater firing accuracy for limited periods of time may not be appreciably increased, the effort incident to the maintenance of high efficiency must be reduced to a minimum. It is the appreciation of this subtle factor, essentially the *conservation of energy in relation to efficient performance*, that gives naval preventive medicine its special importance.

I regret, however, that I cannot at this time present the results of an extensive investigation in connection with noise, but I will present herein a brief review of

certain considerations that we have taken cognizance of in our approach to the problem.

Physical Characteristics of Sound in Relation to Hearing

The usual source of sound is a vibrating body. The vibrations set in motion adjacent layers of air, forming waves consisting of alternate rarefactions and condensations periodic with the vibratory stresses and considered as cycles.² The air waves take on certain attributes of the vibration—namely, amplitude, frequency, and wave form. For a given frequency the amplitude determines the loudness, and the frequency, which may be of the order of several thousand cycles per second, determines the pitch. The wave form determined by the amplitude-frequency relationship controls the quality.

The actual pressure produced by the sound wave is exceedingly small—too small in fact to be felt unless the sound intensity is of great magnitude. It appears, therefore, that the scarcely comprehensible characteristic, frequency, gives the sound wave its physiologic importance.

The tuning fork as a simple source of sound is characterized by a single frequency. The vibration of the prongs of the fork causes the wave motion perceived by the ear as sound. Vibrations of high frequency give rise to a high pitch, while less frequent vibrations make for a low pitch.

Sound sources are usually more complex than the tuning fork and give rise to a frequency spectrum. Noise usually contains a large number of frequencies. In Fig. 1 the typical wave form of a street noise is shown in contrast with that of a

The contents of this paper do not represent an official expression of the Navy Department.

pure tone of 500 cycles The identifying characteristic of the noise wave is its striking irregularity

In addition to the frequency spectrum, sound possesses intensity, which gives rise to the sensation of loudness The harder the tuning fork is struck, for example, the greater the amplitude of excursion of the prongs to and from the rest position and the greater the intensity or loudness

Sound intensity is expressed by the decibel scale representing a logarithmic ratio in which a given intensity is compared to a standard reference level This level has a physiologic basis, for it is the approximate threshold of hearing or the minimum audible sound for a frequency of 1,000 cycles It is assumed to have an intensity of unity, i e, a loudness level of zero as measured by the decibel scale, since the logarithm of 1.0 is zero There is, moreover, a physiologic basis for expressing sound intensity in logarithmic units, for, according to the Weber-Fechner law, response to a stimulus tends to be proportional to the logarithm of the intensity of the stimulus

A sound intensity level of 50 decibels represents 10^5 energy units or a sound level 100,000 times greater than the threshold level of unity, and a level of 60 decibels represents 10^6 energy units or a sound level 1,000,000 times greater than sound intensity at threshold of hearing

Expressed in physical units the amount of energy incident to sound production is exceedingly small The power developed, for example, as a result of noise associated with a crowd of 100,000 persons watching a football game is just sufficient to light a small electric lamp, and a ship's siren, which probably develops the highest controlled sound power, creates a total energy of only one-third horsepower No valid case can therefore be made against noise on the basis of inherent energy loss

Measurement of Sound

The range of the ear extends from the threshold of hearing at zero decibels to

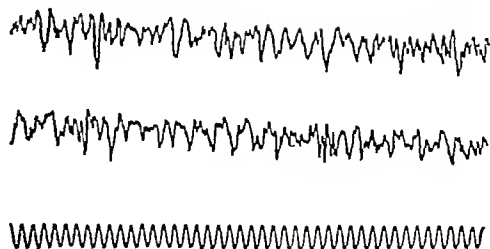


FIG 1 Wave form of a pure tone of 500 cycles in contrast with the wave form of street noise [Courtesy D Van Nostrand Co, Inc]

about 120 decibels for intermediate frequencies, i e, 1,000 cycles At a level of 120 decibels sound is actually felt as well as heard, and this level is designated as the threshold of feeling

It is necessary at this point to stress an important fact, namely, that the sensation of loudness as recorded by the ear does not exactly correspond to the intensity scale as measured in decibels except for a comparatively small band in the frequency range Although the ear is the final judge of the noise effect as it exists at a particular time, no comparisons and no valid record of noise levels can be made on the basis of subjective reactions

The use of sound-measuring instruments alone or in combination with the ear is therefore imperative in the study of the noise problem

This important consideration will be clarified if we inspect the graph (Fig 2) showing the area of the audible range of the human ear in relation to frequency and intensity levels It is observed that both in the high and in the low frequencies a greater intensity is necessary to produce the same sensation of loudness compared with a frequency range around 1,024 cycles per second

The intensity level as measured in decibels must therefore be interpreted in relation to frequency A sound that has an intensity level of 50 decibels above the standard reference level will be as loud as normal conversation in the frequency range of 1,000 to 2,000 cycles But, if the frequency is 60 cycles per second, it will be barely audible, and at 30 cycles

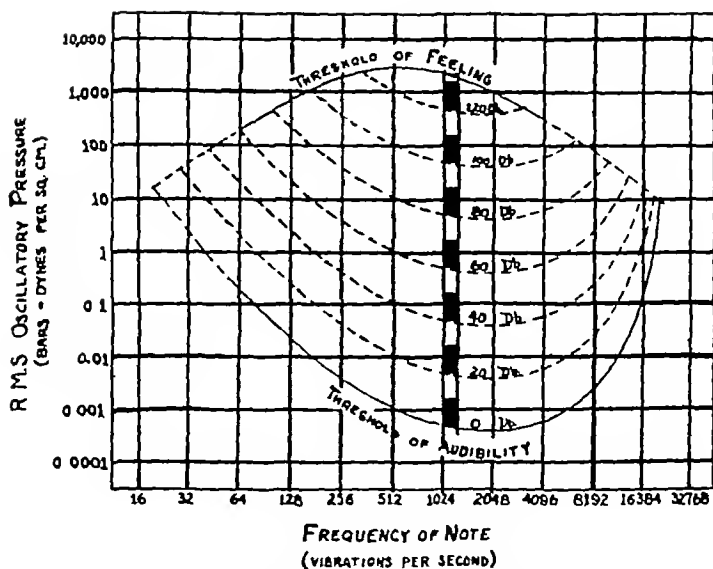


FIG 2 Audible range of the human ear showing the audible sensation area in relation to frequency and intensity of the sound source [From report of Lieut R. T. Sutherland (C C) U S N]

per second the sound will not be heard at all

Thus the numerical values on the decibel scale do not correspond to differences in sensation. As Cox⁴ has stated "A 60-watt lamp does not look twice as bright as a 30-watt lamp, and a temperature of 80 F does not feel twice as warm as a temperature of 40 F. Neither is 60 decibels twice as loud as 30 decibels, nor is 80 decibels twice as loud as 40." If the intensity of a sound source, for example, is increased 30 decibels above its original level, the average person will consider the sound level to have increased tenfold.

Although it was formerly thought that the ear possessed no means of judging relative loudness, tests conducted in the Bell Telephone laboratories showed that there was a definite relationship between the reduction in sound intensity as measured in decibels and the apparent reduction in loudness as judged by the ear. If we refer to Fig 3, it is observed that a reduction in the intensity level of complex sounds of about 10 decibels between loudness levels of 40 to 100 decibels is judged by the ear to be about a 50 per cent re-

duction in loudness. The value, therefore, of comparatively small reductions in noise intensity is apparent from this fact.

Thus far we have discussed sound measurements in relation to hearing, and while these measurements form the basis for an analysis of the noise problem, too much emphasis cannot be placed upon the importance of the emotional response of the individual.

It is the individual's emotional reaction that renders sensory perception with respect to hearing so unreliable. Inquiry, for example, of three aviators as to which of three airplane motors was noisiest brought forth three different answers. Individuals, moreover, who are aboard ship are said to have been relieved of noise annoyance by observing an engineer take sound measurements, although nothing had been done to diminish noise intensity. It would appear, therefore, that a chart showing the degree of annoyance elicited by a given frequency would be as important as measurements of the intensity level. In a report compiled by Mr. Dennis⁶ of the Noise Abatement Commission of New York City, the conclusions reached were that the degree of

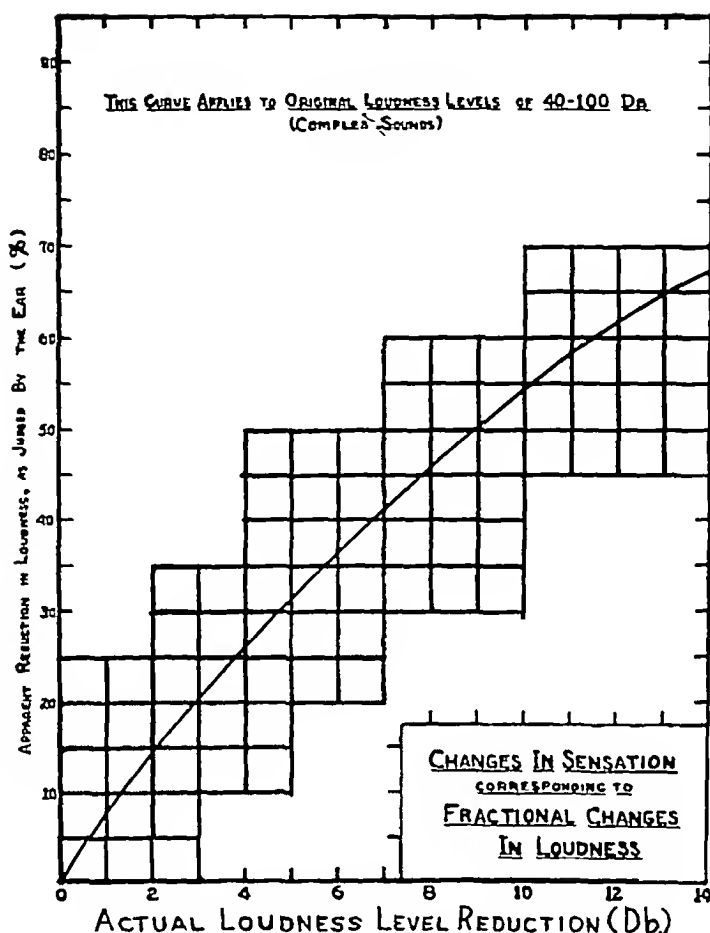


FIG 3 Ordinate scale indicates the percentage reduction in loudness as judged by the ear in contrast with the intensity level reduction in decibels as shown on the abscissa. Over a wide range of intensity levels a reduction in the intensity of complex sounds of 10 decibels is judged by the ear to be about a 50 per cent reduction in loudness [From the report of Lieut R. T. Sutherland (C.C.) U.S.N.]

annoyance seems to depend, in addition to intensity of noise, not only upon the component frequencies and the general character whether steady or intermittent but also upon whether or not the noise was regarded as necessary. Noise, for example, arising from the operation of mechanical equipment may not be objectionable to an untrained ear, but to a mechanic such noise might be highly distracting. Rattling, squeaking, or intermittent or erratic sounds may cause an annoyance out of all proportion to their intensity. Whatever our educational background, we cannot dissociate the

sensation of sound from its attendant emotional response.

The automobile horn represents the classic example of a pernicious source of noise. Not only may the intensity level of the horn blast reach 102 decibels at a distance of 23 feet, but the presence of inharmonic overtones increases the annoyance factor. Moreover, the unnecessary blasting of horns heralds the emotional instability of the metropolitan

Instruments for Measuring Sound

So recent is the scientific approach to sound measurements employing the mi-

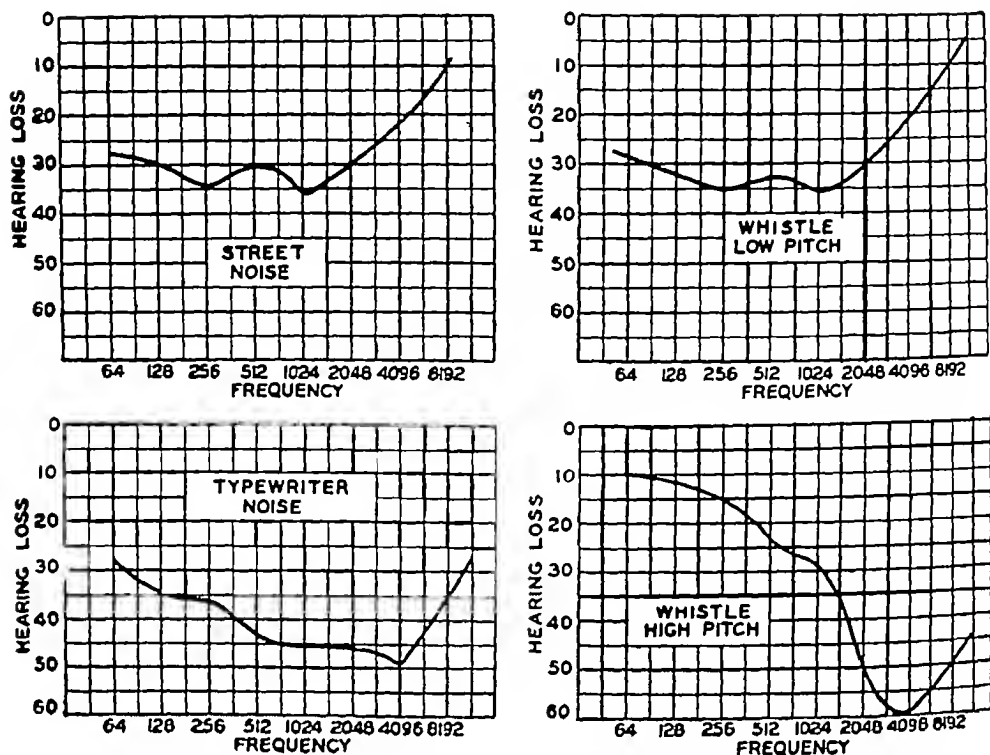


FIG 4 Audiograms obtained in the presence of familiar noises depicting hearing loss in decibels for sounds other than the ambient noise (Courtesy D Van Nostrand Co, Inc)

crophone, vacuum tube, and amplifier that standards for noise measurements and acoustical terminology were adopted only three years ago. Apart from direct-reading noise meters that register the noise level in decibels, the audiometer deserves special mention because of its widespread use in evaluating hearing impairment.

A standard type of audiometer consists of a battery-operated buzzer, an attenuator, and a single earphone of special design. The earphone has an offset cap so arranged that the ambient noise is heard by the ear exposed to the buzzer sound. The loudness of the buzzer can be controlled by a rheostat. A noise-level reading is obtained when the buzzer sound is just masked by the incoming noise.

The Noise Audiogram—Audiometer tests conducted in noisy places have been of great value in determining, for example, the impairment in hearing and the nu-

sance factor of noise in New York City. In offices and places of business the deafening effect usually encountered is 45 to 55 decibels, while on a noisy street corner sounds of less than 80 decibels will be masked.

Fig 4 shows audiograms obtained in the presence of certain types of noise.

Physiologic Effects of Noise

McCord, Teal, and Witheridge⁵ have summarized our knowledge as to the physiologic effects of noise by stating that noise deafness constitutes the most serious and tangible of the bad noise effects. In addition there are numerous, scarcely measurable injuries made evident by neuroses, loss of sleep, excessive fatigue, and emotional disturbances.

Effect of Noise on Hearing

A study by the New York Department of Labor⁷ may be taken as representative of surveys conducted in noisy industries.

with regard to impaired hearing. It was found that in a group of 1,040 workers the greatest incidence of deafness occurred in those groups subjected to the greatest amount of noise and to certain types of noises.

Impaired hearing, for example, occurred in 21 out of 24 individuals constantly subjected to noise levels between 60 and 80 decibels. While it is difficult to evaluate accurately impairment of hearing on the basis of statistical analysis, the fact that out of 1,040 workers 246 were deafened and that of this number 155 gave no history to account for auditory impairment serves to indicate the consequences of exposure in noisy trades. It would appear that occupational deafness in the trades of boiler making and those involving drop forging is a well-established entity.

The finding of McCord⁵ that 52 per cent of train dispatchers suffered from diminished hearing in the "telephone" ear is especially convincing.

Particularly damaging are very loud or sudden noises such as explosions. In the military service we are especially concerned with gunfire deafness. In the Navy during the period from 1929 to 1938, 34 admissions were recorded for deafness due to heavy firing. Of this number 25 were invalided from service, and the total number of sick days totaled 1,904.

Sutherland¹ has calculated that the noise level of gunfire is instantaneously of the order of 150 to 180 decibels for a man exposed to a blast pressure of 7 pounds per square inch. Since permanent injury to the inner ear may be caused by a noise intensity of 120 decibels, at first glance it appears necessary to provide ear protection of the order of 50 decibels or to protect individuals by means of screens. Actually, the shock wave is of such short duration that less protection will usually suffice.

In the etiology of gunfire deafness the relative importance of noise and of pressure trauma is not entirely clear. The tremendous pressure changes, at first

positive and then negative and occurring instantaneously at the time the projectile is discharged, appear to be responsible for the rupture of the tympanic membrane and for the middle-ear hemorrhage. But whether or not this derangement in structure greatly disturbs the hearing is not known.

In submarine personnel exposed to pressure trauma incident to raising barometric pressure in a chamber, permanent impairment in hearing did not follow rupture of tympanic membranes and middle-ear hemorrhage incident to the rapid increase in external pressure. Moreover, audiometer tests conducted among 20 deep-sea divers exposed to traumatic pressure changes over periods from five to twenty years resulted in normal findings or showed diminished hearing beyond the range of the spoken voice—that is the frequency range of 4,096 cycles, an impairment associated with increased age or attributable to the effects of excessive noise.⁸

With respect to aviators it is unlikely, therefore, that barometric-pressure trauma is responsible for impairment in hearing reported in about 1 out of 4 experienced pilots. Such impairment in hearing appears to be the result of air- or bone-conducted vibrations.⁹ An extensive audiometric study is now being conducted at naval aviation training bases for the purpose of measuring impairment in hearing in relation to duration of aviation service.

The factor of bone-conducted vibrations in the etiology of noise deafness appears to be important as judged by the results of animal tests. Popoff¹⁰ showed that in two groups of mice exposed to the same air-borne sound the group exposed to vibrations transmitted through the floor developed destructive changes in the organ of Corti, while no alterations occurred in the group of mice suspended above the floor.

Effect of Noise on Work Efficiency

There are numerous investigations to show that noise impairs efficiency in work.

output. In the study of Weston and Adams¹¹ concerning the performance of weavers, the use of ear protectors was said to have increased efficiency about 75 per cent. In a packing room it was found that output was increased about 12 per cent when a noisy ventilating fan was turned off, despite the resultant decreased ventilation.

Examples may be cited at length to show that efficiency is increased when high noise levels are reduced. While the increase in efficiency may appear to be small and in the range of 5 to 10 per cent, in the military service an increase of 1 per cent in efficiency of performance may be a decisive factor in determining victory or defeat.

Fatigue Due to Noise

A serious impediment in tests of mental or neuromuscular performance is the factor of compensatory effort that serves to maintain adequate function until the "breaking point" is reached. Compensatory effort, however, manifests itself by an increased susceptibility to fatigue. In our laboratory we have found that even the noise resulting from the operation of a water pump caused fatigue to appear earlier than in quiet surroundings. We have attributed the noise fatigue to the factor of increased concentration incident to the maintenance of a satisfactory standard of analytical work.

In a study conducted for the Navy by F. C. Houghten¹² with reference to efficiency in relation to a noisy and hot environment, the preliminary results did not indicate any marked impairment resulting from noise, but it was found that the subjects objected more to the annoyance or aggravation incident to work performed in a noisy room than they did to the bad effects of the hot atmospheres.

Other Effects of Noise

The reality of some of the physiologic effect of noise is made more apparent by the observations of Smith and Laird¹³ showing that high noise levels slowed peristaltic activity and cut down the flow

of saliva and gastric juice. Intracranial pressure, as well as blood pressure and heart rhythm, has been shown to be affected by noise. Disturbance of sleep, however, is the most obvious cause of fatigue associated with noise.

Noise Levels Aboard Ship

Aboard ship, personnel are grouped together in a small space housing engines, ventilating systems, and other sources of noise. The steel structure of the ship, moreover, is continuous and rigid, and partitions separating compartments are of light weight. From an engineering point of view these characteristics are admirable for noise transmission. It may be of interest to record that the sounding of fog signals constitutes the most powerful common source of controlled noise known. Anyone who has attempted to sleep near a clanging fog bell will appreciate the rapid disintegration of nervous reserve under these conditions.

Apart from the effect of noise aboard ship on the efficiency of personnel, we have also to consider a prime military factor. The technic of following ships by the noises they emit is rapidly being perfected, since sound is transmitted much better through water than through air. In submarines particularly noise minimization is essential to safety.

The main source of noise aboard ship arises from the engines, propellers, impact waves against the hull, and the ventilation system. The engines set up impact noises that are transmitted throughout the ship by the rigid steel framework. While not all of the frequencies of engine noise are audible, they are capable, as already pointed out, of causing disagreeable and injurious vibrations.

Since modern ships are divided into many compartments, an intricate system of forced ventilation is required to maintain an adequate air supply. Noise generated by the operation of ventilating fans is both air-borne and transmitted through duct walls, the ducts serving as sound transmission tubes to disseminate

noise throughout the ship. The operation of forced draft blowers supplying air to the firerooms could be heard at a distance of two miles at sea prior to the installation of corrective acoustical materials.

In addition to these main sources of noise it should be considered that the modern warship is like a factory, not only carrying on activities that make individuals self sufficient for long periods of time but a factory capable of moving at speeds of 30 knots or more and capable of hurling tons of steel and explosives when the objective is destruction. It is not surprising, therefore, that the world of the military sailor is featured by noise in contrast with the proverbial atmosphere of rest and quiet associated with a sea voyage.

Fig 5¹ shows a comparison between the noise levels aboard a warship and familiar noises ashore. It is not surprising that the man of the sea welcomes the comparative peace and quiet of New York City, where the highest street noise level according to the valuable survey of the Noise Abatement Commission⁶ in 1930 was found to average only 81 decibels!

Prevention of Noise

Since noise arises simultaneously from many sources, an important factor to consider is what source should be minimized. What for example is the total combined noise level of two sources, one of which measures 80 decibels and the other 60 decibels?

A level of 80 decibels means that the intensity is 10,000,000 times that of the reference or zero level, while a level of 60 decibels represents an intensity level 1,000,000 times greater than the base level. The sum of the intensities would be 101,000,000 times the threshold value, or expressed in decibels the value would be 80.04. It is obvious that any appreciable reduction in noise level can be obtained only by minimizing the loudest source of noise.

In a preceding paragraph the value of even small reductions in noise levels was

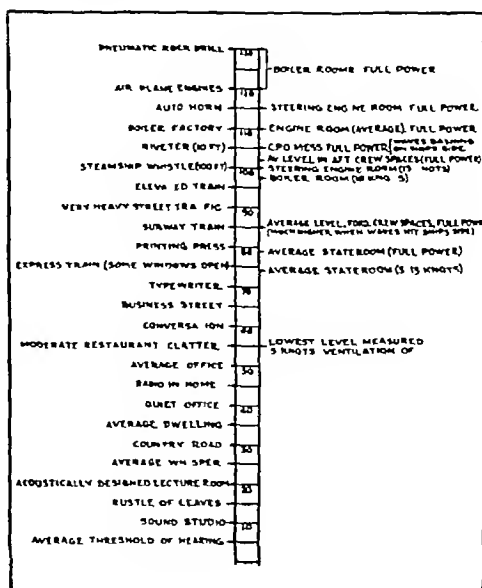


Fig 5 Noise levels aboard a warship compared with familiar noises ashore. [From the report of Lieut. R. T. Sutherland (C.C.) U.S.N.]

emphasized by showing that a decrease of 10 decibels brought about a diminution in loudness, as judged by the ear, of about 50 per cent.

Noise can be reduced at its source, in transmission through the surrounding medium, or by protecting the ear from air- and bone-conducted vibrations. Aboard ship, source minimization of noise frequently is not feasible. When we consider the possibility of decreasing noise transmission through surrounding mediums, it is somewhat discouraging to reflect that the sound insulation value of homogeneous materials is proportional not to the weight of the insulating material but to the logarithm of the weight.

It is more hopeful to consider that in civilian life a serious noise nuisance, the unwarranted blowing of the automobile horn, can be abolished by a courageous ordinance prohibiting the use of the horn as a substitute for vigilant driving.

Ear Protectors

Cotton earplugs reduce noise intensity by about 10 decibels. Specially devised

protectors are said to reduce air-borne sound from 25 to 30 decibels. In Knudsen's¹⁴ audiometer tests in which vibration frequency was maintained at 512 cycles per second, cotton stuffed in the ears provided an insulation of 7 decibels. When the cotton was rolled in a taper the insulating value was 12 decibels. Rubber stoppers increased the insulating value to a range from 25 to 35 decibels, while a special defender of Knudsen's design had an insulating value from 45 to 50 decibels.

The value of these protectors in industry and in the Navy is yet to be determined. Their value would appear to be considerable even where the function of hearing is needed, providing the ear stoppers will mask *only the background level or less*. Any sound that is to be heard with or without ear stoppers must be of greater intensity than the masking level of the background noise.

Summary

The noise problem divides itself essentially into a consideration of hearing impairment and of emotional response leading to loss of efficiency and fatigue.

Noise deafness, the most tangible of the ill effects, appears to be an established entity definitely related to the intensity of the noise level and to the type of noise especially with regard to predominant frequency.

The emotional response of the indi-

vidual to noise depends upon his basic psychic patterns and training. Loss of efficiency and fatigue are the adverse effects of noise manifested by susceptible individuals.

In the Navy, noise levels aboard ship are high. Whether or not there is impairment in hearing and loss of efficiency as a result of the high noise level appears to be an important problem in naval preventive medicine.

I desire to express my appreciation to Lieutenant R T Sutherland (CC), U S N, and to Commander C S Stephenson (MC), U S N, for aid in the preparation of this paper.

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TREATMENT OF A MENTALLY DEFECTIVE CHILD BY A CHIROPRACTOR

A recent controversy, which began between a chiropractor and a medical practitioner and which ended in a law suit, has given the Danish public an insight into the scope of the therapeutic claims of chiropractors. In this particular case, as told in the *J A M A*, chiropractor Andreassen undertook to treat a child suffering from chorea. The child had been admitted to the Ribe Institute for Mental Defectives and had been taken out of it on the parents' request. It was at this stage that Andreassen undertook to give chiropractic treatment for the child's affliction. The family doctor, Dr Ovesen, dissented from this treatment, finding expression for his dissent in words to which the chiropractor took exception. These words, alleged to be defamatory, were addressed in part to the parents of the child, in part to the chiropractor himself. The sentence which the chiropractor claimed to be slanderous was

that "chiropractic treatment of mental deficiency is a swindle and humbug." The upshot of the prosecution for slander in this case was the acquittal of the defendant, the complainant having to pay costs to the tune of 200 kroner. The court found that Dr Ovesen must be considered justified in defining the chiropractor's treatment of the child in the aforementioned terms, considering that the chiropractor knew that the child had come under treatment after having been taken by the parents out of an institute for the mentally defective. The court also found that Dr Ovesen was justified as the family doctor in advising against a treatment which, in the opinion of the medical authorities, must be considered as quite futile. A circumstance militating against the claimant was the further fact that the child had been deprived of proper care and education in order to undergo the chiropractor's treatment.

EPIDEMIC HAZARDS IN WAR

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(Executive Director, Milbank Memorial Fund)

WHATEVER the outcome of the present war, we may be sure that disease will be the final victor, accounting for the largest number of victims and carrying on its deadly work long after the voice of the last gun has spoken. It has been said that the last war was exceptional in that for the first time the number of casualties from military action exceeded the number of victims of disease. That may have been true of certain armies during the period of hostilities, but it is emphatically not true when the victims of disease among civilians are taken into consideration. Every war produces conditions favoring the spread of disease, of which mass movements of population is one of the most important. In preparation for war the strength of armies is increased by recruits from villages and agricultural districts as well as cities. The former fall ready victims to such diseases as measles and mumps, meningococcic meningitis, and the pneumonias. The first months of life in the army are as dangerous for the recruit from the point of view of disease as the first years of life in infants. As the tide of battle rises and falls, refugees add to the mass movements of population. There has been an exodus of refugees in the present war. As far as we are able to judge these have not involved great numbers of people, but they have involved great danger. This is particularly true of the exodus from Poland, for while the Polish Health Service was developing along sound lines, it had serious problems to contend with, such as endemic typhus and typhoid fevers. Also, of course, before the refugees left, the health service in the areas from which they fled must have broken down. It is probable that the movement of refugees within

Poland and Finland was much greater than those extending beyond the national frontiers. Last October I received a cable from Geneva informing me that there were only ten thousand Polish refugees in Rumania and six thousand in Hungary. Little precise information concerning internal refugee movements has come out of Poland, but with regard to Finland we do know that hundreds of thousands of people left their homes after the war with Soviet Russia to find refuge within the restricted frontiers of their own country. This was not a disorganized flight and the areas involved had not been seeded with typhus and typhoid infection as in the case of Poland. This recalls a similar movement in 1922 when the Treaty of Lausanne brought an end to the Greco-Turkish War. Provision had been made for the exchange of populations, and Greeks from Asia Minor poured into Greece, bringing with them smallpox, cholera, and typhoid fever. The resulting epidemics were not checked until more than half a million had been inoculated against these three diseases by an international commission organized by the League of Nations.

Gibbon speaks of the triple scourge of war, pestilence, and famine. These three scourges interact to swell the flood of human misery. Following the last war famine affected a small area in Soviet Russia that had been the seat of malignant tertian malaria. The inhabitants fled, carrying the seeds of this fatal disease to a wide area and causing outbreaks that still smoldered many years afterward. An epidemic of meningococcic meningitis in England during 1917-1918 was ascribed to troops from Canada. In 1918 Vaughan and Palmer estimated that

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meningitis was forty-five times as prevalent in the army as in civilian life, whereas their figure for measles was nineteen and for pneumonia twelve. In American army camps during the period September, 1917-March, 1918, meningitis next to pneumonia was the most serious problem that the Army Medical Corps had to meet, partly by reason of its fatality and partly because it showed the greatest excess over the disease in civilian communities. Records show that it also occurred among civilians and in army camps in the war of 1812, and it was widely distributed both north and south in the war between the states. This was followed by its wide distribution over the country for nearly ten years after the war ended.

The World War of 1914-1918 will always be associated with the pandemic of influenza occurring toward and after its close. The two greatest pandemics of which we have record and from which we have learned nearly everything we know about the disease occurred during the last fifty years, yet we have no data upon which to base any predictions concerning the next occurrence of the disease in epidemic form. But there are ominous reports from abroad that may indicate that the disease is gradually acquiring momentum as it has always done before a great outbreak.

Epidemic hazards in the present war will depend upon various factors, such as the nature of war and the diseases prevalent in the areas where it is waged.

If war continued to be waged as in 1914, it might not be too difficult to predict the influence it would have upon the prevalence of disease. But its nature has changed radically since 1914, so much so that it is now difficult to distinguish between the end of peace and the beginning of hostilities. There was a time when war involved only a few soldiers in limited areas. At present whole countries have become its battlefields. Political and economic hostilities have become integral parts of modern war. To add to the confusion governments do not always take the trouble to declare that

they are at war. Transfer of territory may take place through political action alone and sovereignty be lost or abandoned without resort to armed force. Two great armies shelter themselves behind supposedly impregnable fortifications carrying on desultory artillery or patrol actions. People ask, "When will real war begin?" not realizing that it has begun long since, long before concrete shelters were built or armies assembled. For in modern times war begins when nations prepare to utilize all of their resources to achieve their political objectives, whether these be concerned with defense against a possible aggressor or the acquisition of new territory. In either case the result is the same. The threat of war causes nations to prepare to defend themselves. An attempt is made to attain national self sufficiency, which cannot be achieved except by a lowering of the standard of living. Private production for profit must be subordinated to national production for defense. The aim of government ceases to be the public welfare and becomes the production of arms and other materials of war. The whole national economy is geared into production for war purposes. Imports are restricted to materials necessary for the army, navy, and air force, exports are subsidized recklessly to obtain foreign exchange with which to buy essential raw materials, even food, badly needed at home, is exported at prices that depress the world market. Slowly but surely control is tightened until it affects every living soul and every industry, no matter how small. Total war lowers standards of living, causes longer hours of labor, brings a halt to housing, makes for higher taxes, dearer food, less money for social needs, and less production for private consumption. When hostilities begin, they are directed as much at industrial centers as against armies, the battlefield includes every part of the country that enemy air forces can reach. Hence, all vital areas must be organized for defense. During a visit to France and England in the late summer of 1939, I found that the staffs

of health departments were spending one-fifth to one-fourth of their time in their normal work, four-fifths to three-fourths on organizing antigas defense, measures of evacuation, first aid, and hospital care. While few details are available concerning total warfare in Poland and Finland, it is likely that it interrupted or destroyed water supplies, transport and distribution of food, systems of lighting, communications, and every other normal activity of modern society. It is to be noted that the destructive effects of such a war increase with the degree of development of the country involved. Think of its results in metropolitan New York where so much depends on the electric motor and other machines. Heating, lighting, transportation, communication, and refrigeration would be subject to instant paralysis. Unable to face such a prospect with equanimity, countries that are threatened evacuate large numbers from exposed areas, involving the dangers always present in mass movements of population. The blockade is an indispensable weapon of total war, ruthlessly employed by every belligerent able to enforce it. It will endeavor to prevent the passage of every scrap of food, every bit of raw material, every commodity that might be used to feed men or factories. We had some experience with the blockade in the last war, and we saw some of its most dire results in Austria and the Balkans, which were devastated by war, famine, and pestilence.

Diseases prevalent in the belligerent countries also affect the epidemic hazards of war. I have spoken of typhus fever, "the scarlet cloak," in Poland, where in my own experience some 1,000 cases occurred yearly, not restricted to any particular region but scattered throughout the country. Typhus fever also occurs in Soviet Russia, Rumania, Hungary, and the Balkans generally. I emphasize typhus fever because it thrives on war, famine, privation, social disorganization, and lack of soap. It has won many wars, and according to Hans Zinsser, may have held up the Austrians before Belgrade

long enough to weigh the balance against the Central Powers in the last war. I can imagine nothing more apt to breed typhus epidemics than the conditions produced by the total war I have been describing. Typhoid fever and its allies also prevail highly in Poland, Russia, and the Balkans. Destruction or disruption of public water supplies and systems of sewerage will not help to keep them under control. Smallpox exists in a particularly virulent form in the same areas. We know of it as the Asiatic form of the disease in contrast to the mild American type which prevails in this country. I am not in a position to say whether influenza and meningococcic meningitis will be epidemic hazards, but we may be sure that morbidity and mortality from pneumonia will rise to greater heights than in peace time. It is also possible that diseases that have not distinguished themselves in former wars may be influenced by new conditions to strike more heavily than ever before. Disease has won more wars than military action, it has governed the course of civilization, retarded progress, and altogether exercised the greatest influence over man's destiny, far surpassing that of military strategy, the movement of armies, and the control of the seas.

By far the most precise information we have concerning epidemic hazards in war concerns the inroads of disease in the ranks of armies, but it is natural to believe that as usual civilians have always suffered much more severely. Certainly it would be logical to suppose that nutritional diseases prevailed most widely among civilians, for every sacrifice is made to keep armies in good fighting trim. You may be surprised that I should include nutritional diseases in a description of epidemic hazards in war. But scurvy and beriberi have occurred in conditions so like epidemics of infectious disease that to exclude them from consideration simply because no infectious agent is concerned seems to me to be somewhat overmeticulous. Furthermore, I have hinted that changes in the nature

of war and greater use of the blockade may well result in a great increase of nutritional diseases among armies and civilians alike. Of all nutritional diseases scurvy is the one most commonly associated with war. Hippocrates refers to an outbreak of sore gums and leg pains among soldiers that was probably scurvy. It would not surprise me to read reports of the widespread occurrence of scurvy in the warring countries after cessation of hostilities. Scurvy has always been common among seamen, and navies have suffered severely, but this is not likely to happen in the present war except among naval prisoners like those on the "Altmark." Scurvy has been an almost constant menace to armies when food ran low. During the Middle Ages it haunted stranded armies and besieged cities, one authority believes that no single campaign of any magnitude escaped. And in one well-known instance it determined the outcome of the campaign. This was the crusade led by Saint Louis against the Saracens. Joinville states that an illness fell upon the host of Saint Louis shortly after the first Friday of Lent in 1250. "The flesh of our legs dried up," states the chronicler, "the skin of our legs became spotted, the flesh of our gums putrefied, nor could anyone escape from this sickness for he had to die. The sign of death was this, that when there was bleeding of the nose, then death was sure." The Turks managed to blockade the river against the ships that were bringing up fresh food supplies, and the sickness increased to such an extent that the King decided to make one last desperate attempt to break through. This attempt failed, and the King and all his knights were captured.

Scurvy was common during the war of 1914-1918 and the hungry years that followed. Prisoners of war suffered severely, 7,500 British soldiers were invalided from Mesopotamia in 1916 as a result of scurvy and the Indian troops suffered even greater ravages. The surrender of Kut was hastened by scurvy among the garrison, which had been

deprived of fresh meat and vegetables.

Pellagra is a serious problem in many European countries to which the war may spread. Yugoslavia, Rumania, Turkey, Southern Russia, and Greece. Beriberi occurs mainly in tropical lands, but it is by no means restricted to them. In 1878 it was so prevalent in the Japanese Navy that three hundred of every thousand men were on the sick list. Thanks to the work of Eijkman and his associates in Java, the Japanese changed naval rations from polished rice to wheat, barley, beans, milk, meat, and only a little rice. This change probably determined the result of the Russo-Japanese War, in which the Japanese Navy scored so heavily.

Our knowledge of rickets will always be associated with the starving city of Vienna. As everyone knows, this city suffered the worst effects of the blockade. Malnutrition in many forms prevailed widely, making the city "an object of pity and a magnificent field for research" as someone has said. Workers from the Lister Institute in London who undertook to study rickets in Vienna received a warm welcome and the offer of every facility from the late Professor Pirquet of the Children's Clinic, University of Vienna. Dr. Harriet Chick and co-workers were able to show that the two apparently conflicting theories of the cause of rickets were both true—rickets is a food-deficiency disease and at the same time it can be prevented or cured by ultraviolet light. The Viennese suffered from many other ills, notably tuberculosis, the mortality from which rose beyond expectation. During several visits to Vienna in the postwar period I saw many evidences of the results of war privations. Most remarkable perhaps were the short stature and miserable appearance of adolescents who had been born and brought up during and after the closing months of the war.

If war brings in its train so many recognizable forms of deficiency disease, if the best equipped and most amply provisioned armies do not escape its ravages, what must conditions be among civilians who are of but minor importance in the

war effort. We may be sure that for every person suffering from scurvy, rickets, beriberi, pellagra, or other nutritional deficiency disease there are thousands in the latent state, their margin of safety reduced to the lowest possible level. For every such soldier there must be scores with general malnutrition, ready to fall easy victims to forms of disease that in better circumstances they might have thrown off.

Hunger has been the lot of man throughout recorded history until quite recent times. Until the advent of the industrial revolution, countries in Western Europe lived sparingly from one famine to another. Men now living recall stories, told them by their grandfathers, of flour mixed with the powdered bark of trees to make bread. Famine still occurs in the Orient, and hundreds of thousands of Chinese—perhaps millions—illustrate with terrible emphasis the kinship of war, famine, and pestilence.

Only in comparatively recent years has man liberated himself from the chains of hunger. Such liberty as we now enjoy is comparatively new in human history, for there could be no intellectual advance toward freedom as long as want dogged man's footsteps. There is a very serious risk that the abundance we have achieved will melt away in the fierce heat of war.

Triumph over disease is also a partial and recent accomplishment, partial because there are diseases we have not learned to control and many others to which the higher income groups appear to be comparatively immune, while the poor—the great bulk of the population even in such comparatively rich countries as our own—suffer from them disproportionately. I need hardly remind you that the unskilled laborer is seven times

more apt to die of tuberculosis than the professional man, and that infant mortality in a western city was 168 in 1930 in families with incomes of \$500 a year and 30 with incomes of \$3,000 and over. There is a similar but smaller disproportion even with regard to cancer and syphilis. If there is one constant and inevitable result of war, it is a lowering of the standard of living, affecting all classes but bearing down most heavily on the poor.

As far as epidemics of infectious diseases are concerned, the necessity of international machinery for its control has been recognized and acted on by governments in the last thirty years. There are now five international health agencies, each playing a part in preventing the spread of disease in this age, which has witnessed such a rapid increase of the opportunities for the spread of disease through increases in the mass and speed of transportation. International epidemic commissions are even now attempting to stamp out plague, typhus fever, and smallpox at their source in China. It is questionable whether such international machinery can long operate in a world that is being drawn more deeply every day into the vortex of war.

I have mentioned Gibbon's reference to the triple scourge of war, famine, and pestilence. It is possible to forecast man's conquest of pestilence and to record his temporary triumph over famine. But famine and pestilence will persist so long as man believes in the resort to armed force as a means of solving his political and social problems. And in spite of all the advances in our knowledge of the cause and prevention of disease, epidemics will prevail wherever war and famine have prepared the way.

AMERICAN FIELD SERVICE BULLETIN

We learned by telephone on June 28, 1940, from London that it has been decided in England to put all hospital, ambulance, first-aid work, etc. under the British Red Cross. This means that such organizations as the American Ambulance, Great Britain, which we had agreed to represent in this country, will disband.

We are obtaining information from the British Red Cross as to their needs for ambulances or

other useful material and will be in a position soon to pass this information along to anyone interested in helping in this direction.

While there is no outlet at the moment for aid to France with conditions changing so rapidly, we are confident that some need will arise for relief to which we can devote ourselves.

STEPHEN GALATTI

INFECTIONS FOLLOWING TRAUMA

FREDERICK S WETHERELL, M D , F A C S , Syracuse, New York

IN NO branch of the practice of medicine is a knowledge of fundamentals more important than in the field of emergency surgery that follows injuries involving the surface of the body. We are here confronted with conditions that demand that we be not only conversant with surgical technic but also have a sharp insight into bacteriology and pathology—in other words, the likes and dislikes of various types of pyogenic organisms and the manner in which tissues heal.

Ideally, a wound should heal by first intention or, if extensive with great loss of tissue, by granulation of a healthy nature. To achieve these results we must either be ready to exhibit a painstaking, nontraumatizing, cleansing technic, preferably under anesthesia, or turn over the job to someone who will. There can be no hurry in this type of surgery, each case being a problem in itself. Proper debridement and careful suturing, which does not choke tissues, are the only means at our disposal that will allow primary healing and, incidentally, prevent infection—at least one of a serious nature. Disregard of these principles will too often eventuate in infected wounds, which leave the patient with a crippled hand or extremity and sometimes end with loss of life. What excuse can there be for hurriedly sewing a piece of clothing or other material into a deep wound, only to find a few days later a virulently active infection requiring weeks of treatment? Ten minutes more, the help of an anesthetist, and a pair of trained eyes and hands would have avoided for the patient a catastrophic illness and bitterly resented sequelae.

Surgeons profited a great deal from the experiences of the last great war. Many of those who learned their lessons in that amphitheatre have taught and written

much about the importance of proper primary surgery. Yet from time to time we are called upon to witness the results of mistreatment such as that outlined in the previous paragraph.

The best way (permitting an hibernianism) to treat infections is to prevent them. The debridement of small wounds requires small instruments. A delicate scissors will snip away fractions of millimeters of dead tissue until bleeding surfaces present themselves or until muscle fibers contract when snipped. These two factors are evidence of living tissue and must be demonstrated before a wound is closed. The best antiseptic is blood circulating in its vessels. Strong antiseptics applied to open wounds are worse than useless, they damage tissues that need to be treated gently. Cleansing with normal saline or Ringer's solution is sufficiently effective—they both approach, in character, the serum that will soon be poured out into the wound.

Economic exigencies should never be considered against the need for rest of an injured part. A better result will always make up for the apparent loss of a workman's time, greater loss follows a too hurried resumption of activity. No importuning of worker or employer should influence the surgeon in his judgment as to the proper length of time for good wound healing—such healing as will not endanger a potentially good outcome. Infection has too often intervened when a patient has been allowed to return to a job that, of necessity, calls for use of an injured member or part and, because of its nature, may allow dirt to get under dressings. The rules are so simple that it seems impossible that they should ever be broken.

We are not to blame, however, if, due to procrastination, a wound is not seen

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until infection is present, if an injury seems too trivial to demand immediate surgical attention, or if a wound shows signs of inflammation of a purulent nature despite good primary care

The reliance that is often placed on the ability of boy-scout-trained first-aid station personnel is to be decried. On several occasions my attention has been called to the pseudomedical practice of individuals in these positions. An injured workman has the right to proper surgical attention at the earliest moment possible. Any delay, arising incident to a system that places dependence on nonmedical personnel and that results in unwonted disability for a workman, should be made the subject of an investigation by the physician who finally takes the brunt of criticism for a poor result. These statements, of course, apply to treatment of patients under workmen's compensation laws and seem to be germane to any dissertation on the treatment of infections in wounds.

A prick of the skin covering the tip of a finger goes unnoticed or is belittled. A few days later a slight redness, a throbbing, perhaps some swelling occur. How often are such symptoms met with the advice to "go home and soak it"? The fact that infection is present is recognized. But the anatomy of the distal phalanx is forgotten—a mass of fat-filled fibrous tissue in which there is no "give" and in which a few beads of pus will cause such distention that the digital arteries become compressed, thus causing the usual sequence of osteomyelitis with loss of bone and a disabled finger tip. Soaking and sulfamidamide will never replace an early free incision in the treatment of such conditions nor for that matter the prompt and proper incision of any purulent infection. It may be said that *no man* has a right to incise an infected hand who has not at least once mastered Kanavel's teachings and then refers to them when in doubt.

There is as much thrill in seeing pus exude from a carefully exposed and nicked flexor tendon sheath following a diagnosis of purulent tenosynovitis as there is in

finding a correctly diagnosed pathologic condition in the abdomen. Going from the general to the specific for a moment, it might be well to call attention to the fact that a tendon sheath has a blood supply contained in a delicate mesotendon. There need be no expression of wonderment, therefore, if a sheath sloughs when nothing apparently has been done except to make an incision into it after its exposure, the operator having forgotten that one wipe with a sponge left that sheath without nourishment. Thus again we have demonstrated the need for the greatest anatomic knowledge when treating infections of a part, the work of which has yet to be duplicated by a man-made machine.

All of the foregoing, it may seem, has been said in a spirit of unwarranted criticism, this paper being read before a body of men who have a particular interest in industrial surgery. That assumption may be fair, yet, it seems proper that from time to time we call attention to the need for continued education along these lines. It is for that reason that special sections on industrial medicine and surgery have been established in many of the larger medical societies throughout this country. But men who profess to have particular skill in certain branches of medicine must accept the responsibility of doing postgraduate teaching. This does not of necessity mean that one is obliged to hold seminars or lecture to large groups more good can often be done by a personal review of a case "gone wrong," with the individual doctor, who should of course be willing to discuss the problem. Unfortunately this willingness is not always manifest.

Surgical principles allow no diversion from their well-known rules—rules that can be read in any textbook of surgery. They are perhaps best known to junior and senior medical students who have had to present evidence of such knowledge from time to time before their graduation. It might be well to expect some evidence of continuance of that knowledge from those who later begin to treat wounds and infections.

A few specific suggestions follow

1 We must remember that the lymphatic system on the surface of the body is disposed in a reticular cutaneous network, which so often becomes involved when surface infection takes place. The red pincushion effect produced on the back of the hand is a good example of the reaction of the reticular lymphatics to infection on the palmar surface of the hand, either superficial or in the tendon sheaths or fascial spaces. This swelling often tempts the knife of the unwary, yet, we know from experience that such procedure does harm—not good. Reticular lymphangitis and cellulitis, which develops with or independent of it, demand rest, warmth, supportive treatment, and today perhaps one of the newer internal antiseptics, but they demand surgery only when there is a definite breakdown of tissue or threatened death of tissue because of extreme swelling. The most frequent error we see is incision of reticular lymphangitis.

2 When infection has supervened and necrosis is present, there is still no better antiseptic than Dakin's solution, providing the surrounding blood supply is good. When Dakin's solution is properly made and applied, infected wounds respond better to its action than to any other medium. Its cost is low, and the technique of its application is easily learned. The small booklet by Carrell and Dehelly,¹ published during the World War, is still available and well worth reading. When the blood supply is not good, the oily dichloramine-T may be used with satisfactory results, the difference being that the latter solution need be applied but once or twice daily but does not have the solvent action on necrotic tissue exhibited by Dakin's solution. The watery solution of chloramine is not to be confused with Dakin's solution.

3 When an infected wound is soaked for more than three days, sometimes even two, the tissues become boggy and a marked round cell infiltration occurs. Long soaking of such wounds is bad treatment. Early dry dressings, with rest, splinting if possible, and elevation when

practical constitute good practice. It is, of course, presupposed that general treatment of the patient is being carried on at the same time, not overlooking the importance of the vitamins, which aid in combating infection in their peculiar manner.

4. The ever-present danger of an intervening complication, such as gangrene or an overwhelming septicemia, must be kept in mind. Prompt treatment of specific character is demanded. It cannot be carried out unless these complications and like conditions are recognized in their incipency—another responsibility that must be assumed by the one in charge of these patients.

5 It is possible that the use of sulfanilamide or like substances, applied directly to potentially infected wounds which have been carefully cleaned out before primary suture, may have some value as a bacteriostasis. Nothing conclusive can be said about this as yet. Much laboratory and clinical research is being done regarding such use of these drugs. They may prove valuable adjuncts, yet, even if they do, it will still be inexcusable to perform careless primary surgery.

6 Lastly, too much stress cannot be laid on the importance of referring to standard works on this subject. One that I have found extremely helpful and is used in many medical schools as a textbook is Homans' *Surgery*.² The first 190 pages of this work, or the chapters on surgical principles in other recent textbooks, should be required yearly reading for medical men who treat the type of injuries and infections under discussion.

Conclusion

A physician who includes the treatment of wounds and infections within the scope of his practice must be willing to have his results compared with those of surgeons who have trained themselves to meet the exigencies that arise in that field. No infection is of such emergent nature that a quick refreshing review of the literature pertaining to the specific problem involved cannot be made. When

such cases are few and far between such study becomes imperative

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Discussion

Dr John H. Garlock, *New York City*—The general principles relative to the treatment of traumatic wounds have been enunciated by Dr Wetherell, and I am sure that no one can disagree with any of them

It is generally agreed that every wound of any magnitude requires immediate hospitalization and adequate surgical care. By adequate surgical care I mean (1) treatment of shock if present, and (2) immediate repair of the injured structures under general anesthesia preceded by careful mechanical cleansing of the involved parts and thorough debridement of the injured tissues. I am in complete agreement with Dr Wetherell when he states that the use of antiseptics without excision of injured tissues is not a guarantee against subsequent infection. For many years we have advocated a plan of preparation of the injured part preliminary to debridement. In brief this consists of general scrubbing of the skin and wound surface with soap and water, followed by irrigation with large quantities of saline solution, irrigation with benzine and ether to eliminate the fat-soluble substances in the skin and wound, and, finally, a prolonged irrigation of the wound and surrounding skin with large quantities of saline solution. A meticulous debridement of all injured tissues is then performed. Closure of the wound may then be effected with due regard for hemostasis, obliteration of dead spaces, avoidance of mass ligation, an atraumatic technique, and the avoidance of tension in the tying of sutures. If the physician who first sees the patient is unable to give such adequate care, then a competent surgeon should be called.

Injuries that involve the palm of the hand and wrist with division of tendons and nerves call for the services of a competent surgeon who is well acquainted with the minute anatomy of the hand and with the details of the care of traumatic wounds.

With respect to the question of tenosynovitis of the flexor tendon sheaths, I wish to state that it has been necessary within recent years to revise to a great extent our previous conceptions of the care of this condition. I refer to the treatment of suppurative tenosynovitis since the advent of sulfanilamide. It is well known that prior to this time the results following surgical therapy of this condition were none too good. Recently we have changed our previous mode of attack that consisted mainly of early operation to one embodying a more conservative point of view. At the present time every case of suspected flexor sheath tenosynovitis is subjected to aspiration of the sheath and immediate examination of a smear of the aspirated material. If chain streptococci are found, sulfanilamide is admin-

istered to the patient, and surgical intervention is deferred. The finger is splinted in position of partial flexion, i.e., the position of rest, during the course of sulfanilamide therapy. This may or may not be combined with wet dressings. I have been impressed with the rapid abatement of all signs of inflammation in the last 5 or 6 cases that have been treated along these lines. In each instance operative drainage was not necessary. If the aspiration of the sheath reveals organisms suggestive of staphylococci, then I believe early surgical intervention is necessary. However, a word of warning must be sounded relative to too great dependence on sulfanilamide and its various compounds in the treatment of infections following trauma. In most instances adequate surgical drainage is still the accepted and most efficient method of treatment.

Dr Frank L. Meleney, *New York City*—Dr Wetherell has brought out most of the fundamental considerations involved in the subject of his paper, and these have been further elaborated upon by Dr Garlock. I agree with almost everything both of these gentlemen have said, but I know Dr Wetherell particularly would like a little criticism.

I want to speak mainly of the importance of determining as soon as possible the nature of the organisms present in any given accidental wound. Often a surgeon is surprised when gas gangrene or tetanus develops from such a wound. Whereas, if he had taken cultures at the time of the accident, he would be forewarned and therefore forearmed. I believe that debridement of an accidental wound of any kind as soon as it comes to the hands of surgeons is important, but I believe that all the debrided tissue ought to be cultured both aerobically and anaerobically. Of course, certain organisms will be found in such a culture that would not establish themselves in the wound, but if the hemolytic streptococcus, the gas gangrene organisms or other anaerobic bacteria are found the surgeon ought to be on the lookout for the development of an infection from these organisms and take the proper precautions.

The question of whether an accidental wound is to be closed or left open after the debridement depends in large measure on the time in which it is first seen after the accident. I believe that in the course of two hours certain virulent organisms can become established in the wound, and in general this should be the time limit for primary closure. Then if the cultures of the debrided tissue show virulent organisms, the wound should be opened if there is any evidence of their activity. If the wound has occurred more than two hours before the time of the debridement, it should be left open and treated in such a way as to minimize the development of infection.

I agree with Dr Wetherell that strong antiseptics should not be used, but we now have an antiseptic that is highly effective against all of the anaerobic organisms, against the hemolytic streptococcus, and, to a less degree, against the staphylococcus. This is zinc peroxide, and I believe should be used in all accidental wounds. This does not injure the tissues in any way, it favors the healing process, and it destroys the most virulent organisms. There are three things to be remembered in the use of zinc peroxide: (1) It must be an effective preparation (there are

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A physician who includes the treatment of wounds and infections within the scope of his practice must be willing to have his results compared with those of surgeons who have trained themselves to meet the exigencies that arise in that field. No infection is of such emergent nature that a quick refreshing review of the literature pertaining to the specific problem involved cannot be made. When

TRAUMA AND ITS RELATIONSHIP TO HEART DISEASE

LOUIS FAUGERES BISHOP, JR, M D, New York City

(Associate Visiting Physician, Bellevue Hospital)

TRAUMA is an important factor in the consideration of diseases of the heart. When one realizes that the patient often overestimates the significance of trauma in heart disease and that the physician frequently fails to recognize it at all, it is easy to see how necessary the systematic analysis of each individual case is. This type of injury may constitute a modern industrial problem that can contribute to longer disability and in some instances to death. Because of the many difficulties surrounding the medicolegal aspects of this subject together with the question of possible compensation, impetus has been given to increased study and recognition of the clinical syndrome of nonpenetrating traumatic heart disease.

It would seem that direct injury to the chest with resultant trauma to the heart has undoubtedly often been overlooked clinically but now is coming to be recognized with increasing frequency. The present status of this type of traumatic heart disease is not unlike that of coronary thrombosis, which at first it was thought impossible to recognize without autopsy.

Clinical recognition of nonpenetrating injuries to the heart has come from experimental and pathologic studies. Moreover, investigative research has led to the recognition of the fact that these nonpenetrating injuries need not always be of a severe nature to cause cardiac injury.

The possibility of cardiac trauma in persons who have sustained injury to the chest is usually unsuspected, and therefore no attempt at diagnosis is made. A review of a large number of patients with nonpenetrating injuries to the chest admitted to Bellevue Hospital over the past ten years shows that rarely, if ever, is it even suspected that the heart might be injured.

One of the reasons for disregarding such a causal factor in heart disease as trauma

has been due to the varying opinions of two opposing groups of thought. The first group¹ emphasizes that "the heart lying against the sternum is vulnerable to any sudden impact over the sternum and, buttressed against the bodies of the thoracic vertebrae posteriorly, is vulnerable to compression forces applied to the chest." The second group² sets forth an entirely opposite opinion that "the heart is a compact, spindle-shaped mass of constantly moving muscle which lies on a soft yielding bed and is well protected by bones. Conditions are such that the heart cannot be reached by a crushing violence unless the force is exceptionally severe." Judging from ever-growing clinical experience it would seem that the first school of thought is more probably correct, because the heart is far more frequently injured than is generally recognized.

A number of clinical cases has been reported from private practice, from large city hospitals, and from industrial companies. The number of such reported cases seems to be increasing.

Among the important experimental and pathologic studies that have aided in the clinical recognition of nonpenetrating injuries as a causative factor in heart disease are the contributions of Schlomka,³ Beck,¹ Bright and Beck,⁴ Kissane, Fidler, and Koons,⁵ Moritz and Atkins.⁶

From a sequential survey of the subject one observes the work of the men who, step by step, advanced on the road leading to a definite understanding of the relation of nonpenetrating trauma to heart disease.

Schlomka's,³ pioneer work (1932-1936) was concerned with the effect of experimental nonpenetrating injuries to the hearts of animals. He found that abnormalities in electrocardiograms, blood-pressure readings and roentgen ray examinations closely paralleled each other in degree and that they varied in extent according

still some ineffective preparations on the market), (2) it should be brought into contact with every part of the wound surface as a creamy suspension, and (3) it should be kept wet with a layer of cotton soaked in water and sealed with an impervious covering so as to prevent evaporation.

With regard to the use of Dakin's solution, we know that this has a very transient antiseptic action and that its chief value is the liquefaction of dead tissue. If it is used frequently or continuously, it does interfere with wound healing. For that reason we consider zinc peroxide very superior to Dakin's solution in the primary treatment of debrided wounds that are to be left open.

As for sulfanilamide I believe that it is effective as a prophylactic for wounds of this kind, but its chief action is on the hemolytic streptococcus, and it cannot be depended upon to control infection with other organisms.

Sulfathiazol seems to be more effective against the staphylococcus than sulfanilamide but is not wholly dependable.

Dr H. Van Ness Spaulding, *New York City*—Those of us who are doing our daily rounds of traumatic surgery cannot fail to be impressed by the epigrammatic words of surgical wisdom as can be presented only by one who has had years of experience on the battleground of infection, as Dr Wetherell.

Many of his axioms are well worthy of repetition.

1 "Proper debridement and careful suturing, which does not choke tissues, are the only means at our disposal that will allow primary healing and, incidentally, prevent infection."

2 "The best antiseptic is blood circulating in its vessels."

3 "Strong antiseptics applied to open wounds are worse than useless."

4 "Soaking and sulfanilamide will never replace an early free incision in the treatment of an infection."

5 "The most frequent error we see is incision of reticular lymphangitis."

6 "Long soaking of infected wounds is bad treatment."

7 "The newer antiseptics may prove valuable adjuncts, yet, if they do, it will still be inexcusable to perform careless primary surgery."

The red storm-warning flag of lymphangitis is always a favorable omen, as it indicates a superficial infection only, rarely eventuates seriously, and only rarely requires surgery.

Serious surgical consideration and the intelligent application of surgical principles are required in those infections that are not associated with lymphangitis or lymphadenitis.

We hear too much, perhaps, about some of the

miracles of the newer antiseptics that, indeed, are valueless unless they are used in conjunction with fundamental surgical principles.

When, however, men in the various fields of specialties acclaim the value of some of these newer antiseptics, it behooves us to accept their value as an added tool of surgical procedure.

The ear men tell me, "sulfanilamide is killing my mastoid practice"—the genitourinary men are lamenting a seven-day gonorrhea—the internist is rewriting his chapter on pneumonia therapy. It behooves the industrial surgeon to apply these experiences to his own problems.

I have had experience with an old composite section 27A-type osteomyelitis of the ankle, progressing nowhere after eight or nine sequestrectomies following an original compound fracture at the ankle, which began to show what one might term alarming signs of healing by the administration of a 60-gram daily intake of sulfanilamide. Within two days with a moderately soaked purulent dressing it became entirely serous. Within a week the discharge was limited to a small sinus with the large ulcer showing healthy granulation tissue for the first time.

In the past two years we have had 4 cases of fulminating gas gangrene that made a favorable issue with an entirely more benign course by the use of sulfanilamide in conjunction with rational surgery.

In the past two months, I have had 2 cases of badly compounded frontal sinuses and complicated skull fractures in which liberal doses of sulfapyridine were employed immediately following debridement—the wound healing primarily in an unexpected manner. While I am aware of the late possibilities of meningeal complications, nevertheless, I feel that this form of medication is well worthy of experimentation as a prophylactic.

My associates at the Reconstruction Hospital have reported a pneumococcal meningitis following skull fracture, with high dosages of sulfapyridine bringing to favorable issue a case that, before the advent of sulfapyridine, would more than likely have come to fatal issue.

In December a patient brought into the hospital in coma, with an extensive head injury thought to be a concussion until the spinal tap showed a purulent pneumococcal meningitis, was promptly treated intravenously by sodium sulfapyridine, was discharged as cured, and was able to leave the hospital in four weeks.

Before the administration of a new antiseptic it is imperative that all rational surgical principles be applied, and, conversely, it is becoming a form of surgical negligence not to add this additional tool as an aid in the severe forms of infection.

The dosage is controlled to the point of head aches, cyanosis, or nausea.

MEDICAL PREPAREDNESS

The Indiana State Medical Association at its last annual meeting adopted a resolution constituting and empowering a committee "to act in liaison with proper military and civic authorities and veterans' organizations to make a complete study for and prepare a detailed program

for medical cooperation and preparedness in the event of M-day becoming a reality, to the end that in such an event an unhurried and effective program is established supplying first, the medical needs of the military, second, the proper medical care at home in a military emergency."

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has been due to the varying opinions of two opposing groups of thought. The first group¹ emphasizes that "the heart lying against the sternum is vulnerable to any sudden impact over the sternum and, buttressed against the bodies of the thoracic vertebrae posteriorly, is vulnerable to compression forces applied to the chest." The second group² sets forth an entirely opposite opinion that "the heart is a compact, spindle-shaped mass of constantly moving muscle which lies on a soft yielding bed and is well protected by bones. Conditions are such that the heart cannot be reached by a crushing violence unless the force is exceptionally severe." Judging from ever-growing clinical experience it would seem that the first school of thought is more probably correct, because the heart is far more frequently injured than is generally recognized.

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to the severity of the original trauma. Often a great discrepancy existed postmortem between the evidence of functional derangement and structural lesions of the heart.

Bright and Beck,⁴ 1935, reviewed the past literature and collected cases, in many of which the ribs were not fractured but injuries to the heart were noted. Beck¹ exposed and contused the hearts of dogs, with resultant myocardial injuries, and noted electrocardiographic changes similar to those obtained in coronary artery occlusion but having a tendency to return to normal.

Kissane,⁶ 1937, showed that mild and severe blows to dogs produced various types and degrees of electrocardiographic changes and that the tendency is for the electrocardiogram to return to normal in a very short time.

If serious myocardial injury can be sustained, as Bright and Beck⁴ have shown, in an injury to the chest without fracture of ribs or sternum, Moritz and Atkins,⁶ 1938, believe it is important to know something of the pathologic, anatomic, and histologic character of the cardiac lesions, since other objective evidence of injury may not be present. They demonstrated in a very careful study that the pathologic characteristics of the scars of myocardial contusion and infarction are frequently identical, and the presumptive nature of their origin must be determined by historical data as well as by postmortem.

Following an accident when the heart and great vessels are noted to be injured, there may be distinct differences of opinion between pathologists as to whether or not the injury caused the pathology that was found at autopsy.

A recent example of such divergence of opinion was illustrated by the case of a man, aged 44, with a known pre-existing heart condition who was injured in an automobile accident. One group of pathologists maintained that the aortic lesion found at autopsy was due to an aortic tear and that the lesion was traumatic. Whereas another group contended that due to the lack of any organizing thrombotic material or from other appearances, the tear in the aorta antedated the accident by a considerable length of time, and that it probably represented an old spontaneous and incomplete tear of the intima or media.

Medicolegal Aspect—Financial settlement was agreed upon in this case.

The most complete survey of the entire literature of traumatic heart disease to date is by Warburg.⁷

heart disease as a whole by Spicer,¹⁰ is an excellent guide in considering the possibilities of a traumatic problem. His outline is as follows: "A—Penetrating Injury (1) Fatal, (2) Nonfatal, complications. B*—Nonpenetrating Injuries (1) Injury to the pericardium (a) acute pericarditis and (b) chronic pericarditis, (2) Injury to the heart muscle (a) rupture and (b) contusion, (3) Injury to the heart valves—endocarditis, (4) Injury to the aorta (a) rupture and (b) aneurysm, (5) Extrasystolic arrhythmia, (6) Auricular fibrillation, (7) Auricular flutter, (8) Heart block, (9) Tachycardia, (10) Bradycardia, (11) Myocarditis, (12) Coronary disease, (13) Angina, (14) Heart strain."

Most certainly the clinical work on this subject should be as carefully and painstakingly done as the investigative research that has led to its recognition. Brahdy and Kahn¹¹ have well stated that "The subject of traumatic heart disease should be of an investigative nature and not dependent on decisions of a court." These authors have emphasized that no conclusion of a traumatic heart case should be given without a consideration of the following items: "(1) The physical and psychic condition of the patient, prior to his injury (2) The type and site and severity of the injury (3) The immediate effects of injury both objective and subjective. (4) 'Bridging symptoms' or course of the traumatic symptomatology from the injury to the onset of the disease (5) The latent period of the disease, that is, the time interval between the occurrence of the injury and the appearance of the disease (6) The diagnosis of the disease, its mode of onset, the site of the injury, and its course."

It is very unlikely that one physician will observe any very large group of these cases, although internists interested in cardiology will be called on not infrequently for expert opinion. Apparently, these traumatic cases are rare, even in big industrial companies. A recent personal communication from a physician em-

* We are concerned in this communication with Group B.

ployed by a large industrial company stated that while severe injuries are relatively frequent, in nearly a ten-year period he has heard of only 1 possible example of cardiac trauma from a nonpenetrating chest injury¹²

A New York surgeon states that, in his opinion, many cases in which there are multiple injuries to the chest prove fatal on account of shock. He believes that an injury that causes severe damage to the ribs might injure the heart. He knows of no case in which the heart, as such, has been injured. He added that had he thought of the possibility of cardiac trauma, he might have found it more often. In most hospitals there is no routine complete study of the heart following injury to the chest.

The following cases illustrate some of the problems involved in traumatic heart disease from the nonpenetrating type of injuries to the chest.

Case Reports

Case 1—An example of nonpenetrating contusion of the heart muscle was that of a white 50-year-old male whose occupation was that of a concert manager. The following facts were obtained from Temple University Hospital records. There was no previous illness, either physical or mental. He had not had a medical examination for a long time. The accident occurred on March 17, 1938, while the man was driving his own car. I examined him in New York on April 15, 1938. The injury was in a head-on automobile collision in which he was knocked unconscious, and was given emergency treatment in a nearby hospital. After he regained consciousness he got up and walked to the Temple University Hospital complaining of extreme fatigue. He was pale, and respirations were 24 per minute. A blowing murmur was heard over the heart on his initial examination. Blood pressure was 116/75 mm Hg. Roentgenographic examination showed fractures of the right fourth and ninth ribs in the axilla. Pleural adhesions were noted on the right. The following additional notes were subsequently made on the heart. Heart was not enlarged. apical thrust was felt in the fourth interspace within the mid-clavicular line. No thrill was felt. A loud blowing murmur was heard over all of the cardiovascular area, maximum just outside of the nipple. No diastolic murmur. There were physical signs of fluid at both lung bases more

on the right. On fluoroscopy the presence of presumably partly encapsulated fluid was noted in both pleural cavities, more on the right. Heart was not enlarged. The electrocardiogram showed definite changes immediately after the injury, the graph subsequently returned to normal. Following the injury the patient had bed rest for three weeks, and then came to New York, thus seeming to have fair cardiac reserve. I saw the patient due to the fact that he had developed evidence of pulmonary infarction, from which he recovered after a prolonged course.

Comment

Such an example of traumatic heart disease, associated with severe injury of the nonpenetrating type caused by contusion of compressive forces, seemed to offer undoubted evidence that the heart muscle was injured. In this case there was considerable speculation as to the type of injury with which we were dealing. From the loud blowing murmur it could be suspected that there might have been a ruptured valve or papillary muscle. From a study of the serial electrocardiograms it is a fair assumption that there might have been extensive hemorrhage into the muscle, or actually a rupture or thrombosis of one of the coronary branches, or multiple small areas of necrosis. It was of great clinical interest that, in spite of the very severe injury both to the chest and the heart and the ensuing complications, the patient made an excellent recovery, and is at the present time in good health.

Medicolegal Aspect—No legal action was instituted in this instance.

Case 2—An example illustrating traumatic auricular fibrillation was a fire captain, aged 46 whom I saw eight years after his accident. Prior to the injury he was in good condition able to do his work well, and was an athlete. While a member of the fire department in a large city he was injured in an automobile collision. He was hurled against a pillar and knocked unconscious, suffering contusions and abrasions of the left side of the chest. He was immediately taken to a hospital, where he remained for two days. After being dismissed from the hospital, he was too weak to work and went home and to bed for two weeks. Though now ambulatory he is unable to work due to pain in the region of the heart, palpitation, and dizzy spells. The symptomatology has existed more or less continuously up to the present time. There was no latent period between the occurrence of the injury and the appearance of the heart symptoms. The diagnosis of his condition is auricular fibrillation, which first appeared in paroxysmal form, and then became chronic as it is at the present time.

Comment

Although the man was taken to the hospital immediately following the severe contusion to the chest, the heart was at first considered normal. No complete cardiologic examination (including electrocardiographic and roentgenologic examination) was done, so we are not entirely sure whether or not there were immediate indications of injury to the heart, although this is suspected from the subsequent history and course. As far as we know there was no pre-existing heart condition. The man was apparently exceedingly healthy and engaged in all kinds of athletic activity. We have no medical examination previous to the accident.

Medicolegal Aspect—The legal question involved was whether or not the injury could be a direct cause of the man's cardiac condition. The case was decided in the New York Supreme Court in favor of the claimant. It has been appealed on the ground that claim should have been made within four months after the injury. The case has been argued but the court is in recess.

Case 3—Heart block associated with trauma was the diagnosis under consideration in a 51-year-old stagehand (a "rigger"), whom I examined about a year and one-half after an accident. He had been examined two months before the accident and was found to be in satisfactory mental and physical condition. The accident was very unusual. In February, 1937, he was working on top of a post when it gave way. He was dislodged and fell catching onto another post where he was suspended till rescued. He said he was "scared to death." The degree of contusion to the chest was questionable. There was no immediate effect from the accident. There were no "bridging symptoms." There existed a latent period of two weeks before he had a pain in his chest, which he thought was "indigestion." His physician then kept him in bed for five months because at this time heart block was noted. There was some question as to the exact time of the development of the heart block. A clinical diagnosis was made of advanced generalized arteriosclerosis, aortic stenosis and complete heart block.

Comment

Heart block is extremely rare following trauma but occasional examples have been reported.

Medicolegal Aspect—A court decision was rendered in favor of the plaintiff, in that it was believed that a causal relation existed between the trauma and his heart condition. In my opinion it was extremely unlikely that trauma did cause any such pathology. I believed that the development of heart block in this case

was the natural clinical life history of the disease.

Case 4—The possibility of the existence of traumatic angina pectoris was considered in a white male, aged 51, who was engaged in the wholesale drug business. I examined him on August 12, 1938, six weeks after the accident. About five months previous to the injury he had had a heart examination and was told that he had a "heart condition," but he was uncertain of its nature. He was advised to carry nitroglycerine to use in case he had pain although he had no pain at this time. He stated that he went for a heart examination because so many of his relatives had had heart trouble. The accident was a "head-and-head" collision of automobiles. Sitting behind the steering wheel, he was knocked unconscious for five minutes, and then got up and walked to a car fifteen feet away. There were bruises on the chest and lacerations to the scalp. There were no immediate heart symptoms. A typical anginal syndrome has existed since shortly after the accident.

Comment

Although there was some question of a pre-existing heart condition in this case, it was not definite. With the symptomatology closely following a contusion to the chest, I think it is fair to say there is a strong possibility of this case being an example of so-called traumatic angina pectoris. The man is now working.

Medicolegal Aspect—Decision was rendered in favor of the defendant.

Case 5—The possible aggravation of a pre-existing heart condition following nonpenetrating chest injury is at times a necessary consideration.

Such an accident occurred to a white male, aged 37, superintendent of an apartment house. He was of Swedish origin and seemed calm and content. He had to shovel coal all day from five in the morning till eleven at night. The accident occurred on November 11, 1938, and I examined him on February 18, 1939, three months after the accident. He was known to have had rheumatic heart disease for twenty years. In one admission to the hospital three years previous to the accident he was treated for congestive heart failure, at which time he was placed on digitalis, which he has since taken continuously. In the accident he fell upstairs and struck on the right side of his chest. On the day of the accident he went to a hospital and was put to bed, staying there for about two months until January 24, 1939. The injury apparently aggravated the palpitation and shortness of breath, and he had continuous chest pain. Since the

accident he feels weak and states that he has had "a bubbling feeling in the right side of the chest since January 4, 1939." He has had no shortness of breath or palpitation since the injury. A few days before I examined him, after returning to work and while reaching down for a bucket of ashes, he had such a pain in his right hand and arm that he thought he was paralyzed.

Comment

There was present in this case unquestionable rheumatic heart disease during the course of which there occurred direct contusion to the chest followed by an aggravation of existing symptomatology. It is extremely difficult to be at all sure of the nature of the pathology that may have followed the accident. I believe it is fair to say that a nonpenetrating injury to the chest caused aggravation of pre-existing heart disease.

Medicolegal Aspect—Equal settlement.

Conclusion

Present knowledge of nonpenetrating injuries to the chest as a causal factor in the production of heart disease or the

aggravation of pre-existing heart disease justifies a careful consideration of the patient with such a history.

121 East 60th Street

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INJECTION OF SULFAPYRIDINE SOLUTION UNDER THE SKIN HAS MANY ADVANTAGES

Injections under the skin of sodium sulfapyridine dissolved in a sodium chloride (common salt) solution should be used when nausea or vomiting renders difficult the administration of the drug by mouth, when it is poorly absorbed into the blood stream from the stomach and intestinal tract, or when a high sustained concentration of the drug in the blood is imperative, Dr. George V. Taplin, Dr. Ralph F. Jacox, and Dr. Joe W. Howland, Rochester, New York, advise in J A M A.

The authors successfully injected the sodium sulfapyridine solution into the thighs or under the breasts of more than fifty patients with pneumonia and numerous other conditions in which administration of sulfapyridine by mouth was difficult or impossible.

The advantages of injections under the skin over administration of the drug by mouth, the three doctors say, are: There is no question about absorption, especially when vomiting is present, a high concentration in the blood can be reached within a few hours and can be maintained for eighteen to thirty-six hours, the requirement of sodium chloride or common salt is supplied at the same time, whereas many patients

dislike taking salt by mouth, the fluid intake is supplemented, thus overcoming the difficulty of maintaining the fluid intake at necessary levels because of nausea and vomiting encountered in many cases in which sulfapyridine is given orally. They say also that smaller doses are generally required.

The advantages of injections under the skin over those into the vein involve the lack of danger of local reactions, effective concentration in the blood being maintained for a longer time—twenty-four hours as compared with about twelve hours—and a simpler and widely applicable technique of administration.

Regarding poisonous reactions the authors report they have noted no appreciable difference in their incidence. "There were not sufficient cases in which the sodium sulfapyridine was used alone to evaluate its efficacy as compared with serum or sulfapyridine by mouth," they say, "but the general impression was that the sodium sulfapyridine given hypodermically was equal in effectiveness to oral sulfapyridine, and as a rule smaller amounts were required to cure the patient."

Doctor (consoling) With your lungs you can live six months at most, but your heart is all

right. It can last for another twenty years"—*Medical Record*

MEDICAL EXAMINATION AND THE PROSPECTIVE WORKER

J C ZILLHARDT, M D , Binghamton, New York

IN ORDER to determine just what is accomplished by the routine physical examination of prospective workers at our factory, the data accumulated from 410 examinations are herein analyzed. This total represents the number of applicants considered for employment at the Owego Shoe Manufacturing Plant of the Endicott-Johnson Corporation between February 10, 1937, and October 1, 1938. It is reasonable to assume that the observations are more or less uniform in that a uniform procedure of examination was followed in each case and that 95 per cent of the examinations were done by a single physician.

It is to be emphasized that in presenting these data no claim is made for anything original. It is hoped, however, that a study of this type will stress in a specific way the value of a careful physical examination of prospective workers.

The applicants for vacancies at the plant were interviewed by the employment officer and he selected those who in his judgment seemed worthy of a job, appeared in good health, had no obvious deformities that might interfere with their work, and were equipped by physique, education, and experience for their particular task. Those who met with his approval were referred to the doctor.

The medical examination included first, an adequate history, and second, a physical examination. The latter was supplemented by a routine urinalysis and Wassermann test of the blood, also, such specialized tests were done as might be indicated in the individual case. Thus, x-ray examinations, particularly of the chest, electrocardiographic studies, basal metabolism tests, hematologic examinations, catheterized urine tests, sputum examinations, etc., were made use of at times.

The following salient points were covered in the routine history:

- 1 Age
- 2 Sex
- 3 Marital status single, married, widowed, or divorced
- 4 Race
- 5 Nationality, ability to read and write English
- 6 Last employment
 - a Length of service
 - b Salary
 - c Reason for quitting
- 7 Other members of the family working for the corporation

The history up to this point was taken care of at the employment office and was already recorded on the applicant's card at the time it was received by the examiner.

- 8 Marital history
 - a Children and their ages
 - b Miscarriages, etc
- 9 Family history
- 10 Past history
 - a Childhood diseases measles, mumps, chickenpox, etc
 - b Other diseases rheumatic fever, tonsillitis, tuberculosis, poliomyelitis, etc.
 - c Diseases of nose, throat, cardiorespiratory system (dyspnea, cyanosis, edema, etc.), gastrointestinal tract, genitourinary system, nervous system (headache, fainting, etc.), etc.
 - d Injuries, industrial hazards exposure to dusts, lead, etc
 - e Surgery
- 11 Social history
- 12 Habits
- 13 Catamenia

The physical examination included

- 1 General appearance build, gait, deformities, dyspnea, etc
- 2 Temperature, pulse, and respiration
- 3 Condition of skin
- 4 Eyes
 - a Vision test.
 - b Pupillary reactions
 - c Inflammatory conditions exophthalmos, palsies, nystagmus, etc
- 5 Ears
 - a Hearing
 - b Discharge.
- 6 Mouth
 - a. Teeth.
 - b Gums

*Read at the Annual Meeting of the Medical Society of the State of New York,
New York City, May 8, 1940*

- 7 Throat
 - a. Tonsils
 - b. Catarrh.
- 8 Neck
 - a. Lymph glands
 - b. Thyroid
 - c. Abnormal pulsations, etc.
- 9 Thorax
 - a. Heart.
 - b. Lungs
- 10 Blood pressure.
- 11 Abdomen

Usual observations Particular attention paid to the presence of any herniation, visceral enlargement, or urethral discharge.
- 12 Extremities deformities, posture, gait, edema, condition of feet, reflexes, etc

With reference to the history the question naturally occurs as to whether or not the information obtained is correct. The applicant is often quite cooperative. Yet he is anxious for employment, and it can be readily understood how he might be reluctant to admit certain facts in his past history. This is particularly true in those with a physical abnormality who have been rejected for employment elsewhere or have been refused life insurance. However, it is not as valueless as one may suppose. It is to be kept in mind that the art of history taking involves a match of intelligence of the examiner with that of the applicant. The physician with his training behind him generally has the advantage, and, if he combines this with a little perseverance, it is surprising how often information is revealed that proves of real value when questioning supplements the physical examination. Under the most favorable conditions it is not inconceivable that now and then pathologic states are apt to be overlooked by the examiner, and so one can readily appreciate the wisdom of accepting whatever aid a history, although possibly imperfect, may render.

It was the practice at the factory occasionally to allow applicants to work for a time before requiring them to submit to physical examination. The reason for this presumably was to give the foreman an opportunity to observe whether or not the worker was satisfactory and at the same time to give the newcomer a chance to decide whether or not association with the company was to his liking. This pro-

cedure, although possibly having some appeal at first glance, was decidedly bad. If the situation was such that both foreman and worker were satisfied, there was a tendency either through pressure of work or procrastination to put off the examination. Consequently, the "trial period" at times lapsed into weeks or even months. Eventually when the physician examined the employee he had, on occasion, the misfortune of finding such serious physical defects as to be unable to approve the worker. This naturally led to keen disappointment to the employee and as a rule to the foreman, who invariably had taken great pains in making the man familiar with his job and had reached the point where he probably placed dependence on him. All this grief is needless and can be eliminated by early examination, that is, examination before the applicant is hired or at least within a day or two thereafter. Such procedure also avoids the hazard to which the employee and employer would be subject during the "trial period" in the event that the former had some physical abnormality.

Although the examinations are of definite value to the employer in eliminating individuals that, because of some physical defect, are unsuited for their work or are apt to be a definite liability, a real value is realized also by the prospective worker. If he is accepted for employment, he has the satisfaction of knowing that he has a fairly healthy body. On the other hand, if there is reason for rejection, he is made aware that some difficulty is present, and he can take steps in an attempt to correct it. It is not uncommon to find organic defects that the applicant professed total ignorance of and that, if the defects had remained undiscovered, would have led to serious impairment of health. The existing difficulty might even have been aggravated by his work, therefore bringing to him a greater hardship and of course creating a risk as far as the employer is concerned. With these facts in mind, it is readily understandable how physical examinations are of mutual benefit to employer and employee.

There is still another angle from which

the examinations are beneficial I refer to their public health aspect. While checking over such a large group of individuals, communicable diseases may be brought to light. Persons with tuberculosis, syphilis, or gonorrhea may be discovered, and an opportunity is afforded the physician to instruct these people about the dangers of contagion and the importance of proper treatment.

A general discussion of all applicants examined follows, special reference will be made later to those who were rejected for employment. Of all the 410 people examined, 300, or 73.2 per cent, were women, and 110, or 26.8 per cent, were men. Of these, 204 were single, 189 married, 2 widowed, 7 separated, and 8 divorced. Ninety-five per cent were American born.

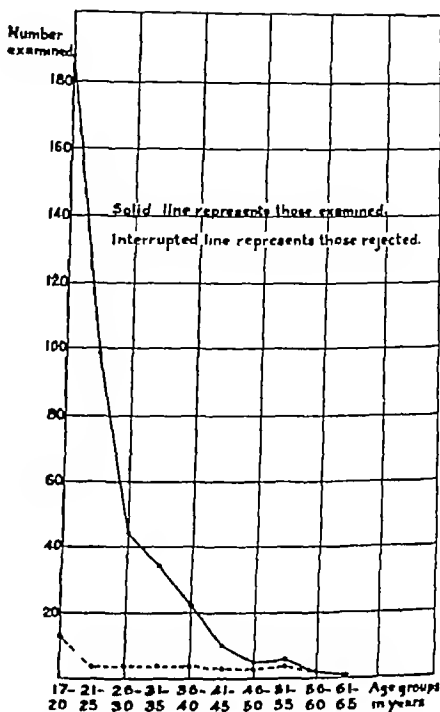
The ages, as illustrated by the accompanying chart, varied from 17 to 62 years.

This group had an estimated total of 431 dependents or 1.05 dependents for each applicant. In considering this figure, which offhand seems somewhat low, it must be borne in mind that over 50 per cent of those examined were single.

Forty, or 9.7 per cent, were found to have temperature elevations. In most cases the fever was slight, and further observations revealed that simple upper respiratory infections were usually responsible. However, a diagnosis of undulant fever was made in 3 instances, and genitourinary tract infection was responsible for the fever in 2.

Defective vision was discovered in 69, or 17 per cent. Those persons found to have defective vision were advised to have their eyes examined and to be fitted with proper lenses. Of these, 8 were found to have such impairment of vision that glasses were of little avail. These accordingly were not approved for employment. The remainder had satisfactory vision with their new glasses and were allowed to go to work. It might be said here that in the shoe industry, where so many machine operators are employed, good vision is indispensable. Defective eyesight is often responsible for the worker misjudging distance, with the result that his fingers instead of his work may be fed into the machine. This always produces a problem for the workman's compensation bureau, and then, too, the worker may be left with an injury that may greatly handicap his future earning power.

Four, or 0.9 per cent, were found to have markedly impaired hearing. Three of these patients had associated poor vision and were rejected for the jobs for which they had applied. As is realized, good hearing is important where an employee works in association with others and



Age relationship of those examined to those rejected

where there is apt to be occasion to warn him of dangers that occur from time to time.

In view of the fact that there are no standard laboratory or clinical criteria for evaluating the state of the tonsils this aspect of examination produced somewhat of a problem. Rarely, if ever, had any of these individuals been under the examiner's care previously, so that there was lacking the knowledge of the case that the family physician would have. Frequently, it is such knowledge that acts as the best guide in determining whether or not the tonsils should be removed. However, it was felt in those with a history of recurrent tonsillitis (two or more attacks per year) and in those having palpable regional cervical glands, indicating a probable inflammatory process in the tonsils, that the tonsils might be considered as a health hazard. One hundred and eight, or 26 per cent, fell into this category. Those who were found physically sound otherwise were approved for employment with the suggestion that tonsillectomy might be advisable. Of course, those applicants who presented themselves with an acute tonsillar process were advised to see their personal physician and were approved only after they were entirely well. It was not unusual for an applicant to come into the office for examination with a fever and acutely

inflamed tonsils Tonsillectomy had been performed previous to this examination in 100 of the 410 examined

Many had minor degrees of dental caries with otherwise sound teeth and healthy gums However, 80, or 19 per cent, had either extensive caries, pyorrhea or both To eliminate any danger from the existing oral sepsis, those of this group were required to correct their difficulty

Three were found to have rheumatic valvular heart disease with estimated minimal mitral lesions

One man, 28 years of age, had a systolic blood pressure of 150 and a diastolic reading of 100 He was considered a marginal case as far as blood pressure was concerned and was allowed to work on a temporary basis However he was kept under observation Individuals of this type were allowed to work, as a rule, provided that no further increase in pressure occurred during a few weeks of trial and that the remainder of the physical examination, with particular reference to the kidneys and the cardiovascular system, was found to be negative

Consideration will now be given to those who were not approved for employment because of the examiner's observations Of the total of 410 applicants examined, 41, or 10 per cent, were found to have physical defects serious enough to warrant their rejection for employment.

Visual impairment headed this list As mentioned previously, 8 were rejected because of visual impairment that could not be corrected by glasses

Seven were found to have blood pressures in excess of normal Of these, 5 apparently were unaware of this condition The ages and average blood pressure readings are listed below

Case Number	Sex	Age	Systolic	Diastolic
258	M	24	210	65
259	F	38	200	110
249	M	42	220	120
250	F	42	200	110
251	F	49	190	95
393	F	52	180	100
281	F	57	210	120

The man listed as 258 had a considerably enlarged heart with systolic and diastolic murmurs at both apex and base.

Applicant 251 had an associated thyrotoxicosis

In addition to the elevated blood pressure the woman referred to as 393 suffered from hot flashes, restlessness, and headache.

Three were found to have undulant fever

In 3 women catheterized urine specimens showed the presence of 10 to 30 pus cells per high-powered field and a slight trace to a trace of albumin. There were no other significant urinary findings Physical examination in 1 revealed an enlarged right kidney In the other 2 the physical examination showed little of importance except a slight temperature elevation Further investigation of the genitourinary tract was not made The cases were referred to their own physicians

Two men were found to have bilateral inguinal hernias

A girl, 20 years of age, presented a symmetrical enlargement of the thyroid gland There was a persistent tachycardia, loss of weight in spite of good appetite, tremor, restlessness, warm moist skin, and intolerance to warmth There was a staring appearance of the eyes However, there was no exophthalmus or any of the other eye signs Her pulse pressure was normal and her basal metabolic rate was -3 She was referred to her physician for further observation and study

One girl had an active cervicitis and salpingitis with a palpable pelvic mass

A rather nervous woman, 40 years of age, was found to have had an appendectomy and unilateral oophorectomy at 19, tonsillectomy at 22, bilateral salpingectomy at 25, abdominal surgery for adhesions and some unknown pelvic disorder at 29, cholecystostomy at 35, and thyroidectomy at 37 On close questioning, she was found to have indefinite abdominal discomfort and in general did not feel well It seemed that at no period of her life was she entirely free from illness In her condition it was difficult to conceive how this woman could become a satisfactory worker She was accordingly not recommended for employment at the time

One individual had an oculomotor palsy associated with occasional attacks of transitory unconsciousness There seemed to be definite mental retardation. This difficulty evidently followed an encephalitis that complicated measles in childhood

A 225-pound woman, 47 years of age, was discovered to have chronic myocardial disease with symptoms of decompensation

Another had apical systolic and diastolic murmurs with moderate cardiac enlargement This woman, 57 years of age, had symptoms of early failure. The blood pressure was normal. There was a suggestive history of rheumatic fever in adolescence

One female applicant who gave her age as 54 appeared at least ten years older Physical examination revealed obvious senility with an

associated tremor of the hands and some emaciation. Although the rest of the examination was essentially negative, it seemed unlikely that this individual would have the endurance or be suited to the more or less strenuous duties of a shoe worker. It seemed far better for her general health, as well as for the company, that she return to her work as seamstress at which occupation she made a fair living.

Pregnancy was the cause of nonapproval in 2 other women.

Three were found to have positive blood Wassermann reactions. One was 27 years of age with a history of probable primary lesion two months previously. The second was a woman with a story of probable exposure within the last two months. The third case was that of a woman, 33 years of age, who admitted having started treatment some time ago but had never continued it. This patient on physical examination presented small, unequal pupils that reacted sluggishly to light. All 3 cases were properly instructed and referred to their physicians. Persons with active syphilis are not considered for employment. Those individuals who develop the disease while working for the company are allowed to continue their jobs and are given treatment without cost at the company's own clinics. However, persistent treatment is insisted upon till it is felt safe, according to the accepted standards, to discharge the case. Even then it is made imperative that the individual return at specified intervals for follow-up study.

Two women refused to have blood taken for Wassermann tests and were likewise not approved.

Four others who were found to have definite refractive errors refused to consult an oculist and be fitted with proper glasses.

All of these 41 individuals were considered desirable applicants by the employment office and, had they not been checked by the physician, would have been employed. Yet it is obvious that, on the whole, the members of this group would hardly have been an asset to the corporation. It is not difficult to surmise the saving to the employer in eliminating the risk, loss of time, sick-relief expenditures, etc., that the hiring of this group would entail.

From the standpoint of the applicants, although the prospects of a job were removed for the time, they were made familiar with their true condition. This knowledge gave them an opportunity to

take such measures as might be necessary to correct or at least check the existing difficulty. This naturally would result in a tendency to better health, prolongation of earning power, better economic circumstances, and extension of the span of life. The individuals were eligible for reconsideration if success was attained in the correction of their difficulty. Those with abnormalities of a benign character, not interfering with their occupation, were given employment. Elaboration on these conditions will not be attempted at this time.

It may be of interest to refer briefly to the personnel and to the equipment of the medical offices in which the examinations were made and also to mention a word regarding the approximate cost of a service of this type. It is well to point out that the company furnishes complete medical care to all of its workers and their immediate dependents. The same personnel that renders this service performs the employment examinations, also the same offices and equipment are used.

The offices are located on the second floor of a hotel in the business section of the town. The hotel is about one-eighth of a mile from the factory. The offices consist of five adjoining rooms, all of which have windows facing the street. The rooms have a common corridor and connect directly with one another. The suite is composed of a waiting room, laboratory, consultation office, examining room, and drug room. One side of the laboratory is occupied by filing equipment for all records.

A full-time physician is in charge of the unit, and he is assisted by another doctor who devotes but part time to this work. A registered nurse and a laboratory technician complete the staff. This medical unit is directly affiliated with one of the company's larger medical centers in a neighboring town, where x-ray, electrocardiographic, and other special procedures are carried out.

Although it is difficult to say accurately the cost to the company per employment examination, it is estimated that each one represents a sum not exceeding two dol-

lars As this study would indicate, this expenditure renders untold benefit to the employer as well as to the employee. What investment could possibly yield greater interest?

Conclusion

1 The physical examinations of 410 prospective workers are analyzed

2 It is advisable that medical examination be made before the applicant be allowed to begin work

3 Proper medical examination is of paramount importance to the employer in that

- a It selects those who are physically dependable.
- b Liability to the employer is minimized by the rejection of those with serious trouble and by requiring otherwise desirable applicants to correct such reparable defects as poor vision.
- c In questions of compensation, the record of the examination at time of employment may be a valuable reference. This would be particularly true in cases where an individual was hired even though he had some physical abnormality—that is, an abnormality of such a nature as not to conflict with his work.
- d Having a healthy personnel will reduce loss of time due to illness
- e As a result of "d" there is a lowering of expenditures for sick relief

4. A definite benefit is realized by the applicants for employment in that, whether rejected or accepted, they are made aware of the state of their health. This knowledge is conducive to the treatment of existing difficulty, thereby promoting better health and well-being and prolonging earning power and the expectancy of life.

5 The examinations have a public health value in that, in checking over a group of people of this type, communicable diseases may be discovered and an opportunity is afforded the examining physician to dispose of such cases in a manner beneficial both to the victim and to the public

3 West End Avenue

Discussion

Dr Niel E Eckelberry, *New York City*—I wish to compliment Dr Zillhardt's work, his paper, ideas, and data presented on this problem—pre-employment examinations. The indus-

trial physician's attitude is extremely important. We have got away from the doctor who would say, "Put out your tongue, turn around, walk over there, etc." After all, the most important individual in this whole problem of pre-employment examination is the man or woman who is seeking employment.

I noticed Dr Zillhardt stated "Special tests were done as might be indicated in the individual case. Thus x-ray examination, particularly of the chest, electrocardiographic studies, etc." Two things come to my mind. First, with regard to x-ray examination of the chest, would it not be better, even with a group of 410, to examine the chest of every individual than to pick out certain individuals for x-ray examination? Why not a fluoroscopic examination of every applicant? It may not be 100 per cent accurate but the percentage rate would be better than if only certain individuals on the basis of physical observations are submitted to this x-ray examination.

Secondly, for each type of job physical requirements are different. Requirements for a clerk are different from those of a machinist or laborer. Is it not wise to standardize the physical requirements for each type of job and then adopt a standardized type of examination for each type of job? I do not believe as a general rule that it is wise to subject individuals looking for employment to electrocardiographic tests, basal metabolism tests, or hematologic examinations unless the particular type of job requires such a specialized test. From a practical standpoint with large groups the examining physician should be able to determine desirable applicants by means of physical examination supplemented by Wassermann test and routine urine examination.

The doctor mentions the value of these examinations as a general health program. They are much more significant in this respect than we realize. Pre-employment examinations develop in the mind of the public the need for good health. Fathers and mothers are becoming aware of the need of their boys and girls being free from defects by the time they reach their earning capacity. Parents can assist in guiding their children in their life's program when they realize physical defects may present a hazard in certain occupations.

I agree fully with Dr Zillhardt that the individual should be examined before he is employed rather than after employment. True, there are certain difficulties, e.g., it takes a few days before Wassermann report comes through. Individuals with correctable defects who subsequently would become good health risks, e.g., individuals with diseased tonsils, carious teeth, etc., should be accepted for employment on a temporary basis, and in three months the case should be reviewed again before final medical acceptance. Dental caries and infected teeth, which play an important role in industrial health, should not be the cause of rejection. The applicant should be taken on a temporary basis, giving him an opportunity to earn enough to get the necessary dental work done. After the teeth have been taken care of, he then may be made a permanent employee from a medical standpoint.

Another question—did I understand Dr Zillhardt does pelvic examinations on women applicants? I question the advisability of this.

I was quite pleased with his attitude on the question of rejection of applicants with high

blood pressure in that a decision was not made upon the monometric reading alone but upon the whole clinical picture. I also liked Dr Zillhardt's emphasis upon obtaining a good history and studying the background of the individual from a medical standpoint.

Dr Michael Lake, *New York City*—There is very little I can add. I think Dr Zillhardt's detailed study on a small group is of more value in analyzing the individual cases and the problems they present than large statistical studies. I agree that this examination should be a part of the employment procedure not an afterthought. It should be made before the individual begins work—before he is hired.

The industrial physician should have proper equipment, proper laboratory equipment, and the advice of specialists when needed.

The exact nature of the examination will have to be followed somewhat according to the job. Color blindness in an individual seeking a job of matching fabrics or glassware would be a cause for rejection. However, in another position, he could be acceptable.

The examining physician should familiarize himself with the jobs in the plant from the standpoint of job hazards. Then the examination is

of great value to the company and also from the standpoint of advice to the individual.

I agree that people should be given an opportunity to correct medical defects after they are working, otherwise they could not afford to correct them. Individuals should be placed at work they can do rather than be rejected.

Dr J C Zillhardt, *Binghamton, New York*—Dr Eckelberry's suggestion regarding routine fluoroscopic examinations is a good one.

Regarding pelvic examinations, we do not do them routinely. In the case mentioned a vaginal discharge was noticed by the nurse. In addition there was low abdominal tenderness. It was explained to the applicant that she might have some pelvic difficulty and that if she wanted further examination she could have it. She requested this.

The physical examination is not to eliminate individuals from employment but to raise the health standards among workers. Many who were eliminated at the time of the first examination had their difficulty corrected and were hired later. Primarily each applicant is considered as a diagnostic problem and then as a candidate for employment.

USE CAUTION WITH SULFAPYRIDINE

A more conservative approach to the use of sulfapyridine, especially as to dosage, in the treatment of pneumonia and more discrimination in substituting it for sulfanilamide in treating other infections are advocated by Dr W Hurst Brown, M.R.C.P., Dr William B Thornton, and J Stuart Wilson, Toronto, Ont., in the *Journal of the American Medical Association* for April 27.

In their study of the toxic or poisonous reactions of sulfanilamide and its derivative, sulfapyridine, the three men found that the latter is essentially more toxic than its parent drug and also that there is a narrow range between the blood concentrations of sulfapyridine that combat infection and those that carry an unwarranted risk of serious toxic reactions.

They point out that "Clinicians have not yet reached agreement as to the blood concentrations of sulfapyridine that are adequate to control pneumonia of pneumococcal origin. Until matters of such fundamental importance are settled, expediency should be tempered by caution."

They believe that high concentrations of sulfapyridine in the blood should be avoided unless it is certain that lower concentrations are not controlling the infection. The highest concentrations, they say, should be reached at the very beginning of treatment and should be reduced after a short period of maintenance. Since elimination of sulfapyridine takes place through the urine, toxic reactions may often be avoided by giving enough fluids to insure an adequate volume of urine.

In an analysis of 100 cases treated by each drug, the authors point out "Serious toxic manifestations were found twice as frequently in patients treated by sulfapyridine as compared with the series on sulfanilamide. Patients treated with intensive doses and in whom high blood concentrations of sulfapyridine were attained showed a very high incidence of serious reactions."

Serious and fairly common complications following intensive sulfapyridine treatment, particularly when the concentrations in the blood are high, are retention and inadequate secretion of urine, and blood in the urine. "Although a decrease in white blood cells occurs more frequently in the sulfapyridine series and especially when the dosage is heavy, it is also encountered in both series and may occur when the doses are small or treatment is of short duration," the authors say.

"Sulfapyridine may remain in the liver in small quantities for as long as forty days after chemical treatment has been terminated. No conclusion has been reached as to whether sulfapyridine causes inflammation of the liver."

The authors emphasize that the vomiting often accompanying sulfapyridine treatment is not always a minor complication but may cause great discomfort, amounting even to agony. "It may be too much to say that the frequency with which the body is impelled to resist the retention of sulfapyridine should at once raise the question of its essentially toxic character, but the protest must at least be significant," they say.

An upstate observer reports that the family's scrub lady said she saw a very long movie, called "Call in the Wind." It sounds serious.

Small Boy "Dad what is meant by the bone of contention?"

Dad "The jawbone my boy"—*Puthfinder*

ACCIDENTS IN CHILDREN

MORRIS ZIMMERMAN, M D, and SAMUEL ADAMS COHEN, M D, New York City

THE nation's increasing concern for better child health and, therefore, life conservation focuses attention on the problems of accidents occurring to children. In this country during 1938 the deaths in children under fifteen years due to accidents totaled approximately 13,500¹. The significance of these fatalities and their relation to mortality computation may be better understood perhaps when it is observed from available statistics that accidents are responsible for more deaths than any single disease in childhood. Moreover, aside from causing an incalculable number of disabilities, many of which are permanent, it may surprise many to learn that mishaps to children are also responsible for 1 out of every 5 deaths between the ages of 5 to 15 years.

Significant in this light is information regarding the children admitted for accidents to the wards of Gouverneur Hospital, New York City, from 1933 to 1938, inclusive. During these six years this municipal hospital, which is situated on the lower east side, received in its wards 752 children up to the ages of 14 years because of injuries resulting from accidents. This total may be compared with the 2,037 children of the same age group admitted to the wards as medical cases and 4,496 children of like ages admitted as surgical cases. Excluding the 2,045 newborns, which were under the care of the pediatric service during this same period, this series of 752 children admitted for accidents therefore constitutes about 11 per cent of the total of 6,533 admissions to the children's wards.

Series Arranged According to Age Group and Sex—There were 35 children in this series under the age of 2 years—22 boys and 13 girls. Between the ages of 2 and less than 5 years of age there were 98 children—58 boys and 40 girls. Children between the ages of 5 and 14 years totaled 619—485 boys and 134 girls. It is to be

noted that there is a significant preponderance of boys over girls in this series as indicated by the 3:1 ratio of 565 to 187. For comparative purposes it is to be stated that, excluding those cases that were admitted to the children's wards for accidents, there is substantially no preponderance of either sex with respect to all other admissions to the children's wards.

Duration in the Hospital—The time spent by this series of 752 cases in the hospital totaled 10,635 days. This averages 14.2 days for each patient. Including all the case fatalities there were 50 children who remained in the hospital for one day or less and 44 who remained in the hospital between one and two days. Some of these abbreviated stays are examined further herein. The longest stay in the hospital for any single admission in this series was 213 days, next in order were cases remaining in the hospital 130 days, 123 days, and 119 days, respectively.

Transportation—The methods of transportation to the hospital were as follows: 287 children were admitted via the ambulance, 22 came in other vehicles, 181 were carried in, and 204 walked in. The other 58 were admitted from the outpatient department of the Gouverneur Hospital to which, whenever practical, all individuals with seemingly minor injuries are referred when they present themselves for treatment to the hospital.

Causes of Accidents—In the main there were two outstanding causes of accidents in this series—those resulting from falls, totaling 295, and those caused by auto traffic, numbering 137. Next in order of frequency were burns and scalds—a total of 33 cases. This series also includes 20 children rescued from the waters adjacent to the wharves located in the vicinity of the hospital; 15 children who were pierced by knives and sharp objects, and 15 who were hurt either by or while riding on bicycles (Table 1). Some other less common causes of accidents in this series were injuries resulting from swallowing foreign bodies, cuts caused by glass, thrown missiles, and kicks from horses or playmates. During this period there were only 10 admissions to the children's wards for injuries received while celebrating the Fourth of July with cannon crackers or other fireworks.

Accidents Arranged According to Age Groups—In tabulating the three most outstanding causes of accidents in this series—namely, falls, auto

¹ Statistics taken from National Safety Council Inc., Chicago.

blood pressure in that a decision was not made upon the monometric reading alone but upon the whole clinical picture. I also liked Dr Zillhardt's emphasis upon obtaining a good history and studying the background of the individual from a medical standpoint.

Dr Michael Lake, *New York City*—There is very little I can add. I think Dr Zillhardt's detailed study on a small group is of more value in analyzing the individual cases and the problems they present than large statistical studies. I agree that this examination should be a part of the employment procedure not an afterthought. It should be made before the individual begins work—before he is hired.

The industrial physician should have proper equipment, proper laboratory equipment, and the advice of specialists when needed.

The exact nature of the examination will have to be followed somewhat according to the job. Color blindness in an individual seeking a job of matching fabrics or glassware would be a cause for rejection. However, in another position, he could be acceptable.

The examining physician should familiarize himself with the jobs in the plant from the standpoint of job hazards. Then the examination is

of great value to the company and also from the standpoint of advice to the individual.

I agree that people should be given an opportunity to correct medical defects after they are working, otherwise they could not afford to correct them. Individuals should be placed at work they can do rather than be rejected.

Dr J C Zillhardt, *Binghamton, New York*—Dr Eckelberry's suggestion regarding routine fluoroscopic examinations is a good one.

Regarding pelvic examinations, we do not do them routinely. In the case mentioned a vaginal discharge was noticed by the nurse. In addition there was low abdominal tenderness. It was explained to the applicant that she might have some pelvic difficulty and that if she wanted further examination she could have it. She requested this.

The physical examination is not to eliminate individuals from employment but to raise the health standards among workers. Many who were eliminated at the time of the first examination had their difficulty corrected and were hired later. Primarily each applicant is considered as a diagnostic problem and then as a candidate for employment.

USE CAUTION WITH SULFAPYRIDINE

A more conservative approach to the use of sulfapyridine, especially as to dosage, in the treatment of pneumonia and more discrimination in substituting it for sulfanilamide in treating other infections are advocated by Dr W Hurst Brown, M R C P, Dr William B Thornton, and J Stuart Wilson, Toronto, Ont., in the *Journal of the American Medical Association* for April 27.

In their study of the toxic or poisonous reactions of sulfanilamide and its derivative, sulfapyridine, the three men found that the latter is essentially more toxic than its parent drug and also that there is a narrow range between the blood concentrations of sulfapyridine that combat infection and those that carry an unwarranted risk of serious toxic reactions.

They point out that clinicians have not yet reached agreement as to the blood concentrations of sulfapyridine that are adequate to control pneumonia of pneumococcal origin. Until matters of such fundamental importance are settled, expediency should be tempered by caution.

They believe that high concentrations of sulfapyridine in the blood should be avoided unless it is certain that lower concentrations are not controlling the infection. The highest concentrations, they say, should be reached at the very beginning of treatment and should be reduced after a short period of maintenance. Since elimination of sulfapyridine takes place through the urine, toxic reactions may often be avoided by giving enough fluids to insure an adequate volume of urine.

In an analysis of 100 cases treated by each drug, the authors point out "Serious toxic manifestations were found twice as frequently in patients treated by sulfapyridine as compared with the series on sulfanilamide. Patients treated with intensive doses and in whom high blood concentrations of sulfapyridine were attained showed a very high incidence of serious reactions."

Serious and fairly common complications following intensive sulfapyridine treatment, particularly when the concentrations in the blood are high, are retention and inadequate secretion of urine, and blood in the urine. "Although a decrease in white blood cells occurs more frequently in the sulfapyridine series and especially when the dosage is heavy, it is also encountered in both series and may occur when the doses are small or treatment is of short duration," the authors say.

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The authors emphasize that the vomiting often accompanying sulfapyridine treatment is not always a minor complication but may cause great discomfort, amounting even to agony. "It may be too much to say that the frequency with which the body is impelled to resist the retention of sulfapyridine should at once raise the question of its essentially toxic character, but the protest must at least be significant," they say.

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Small Boy "Dad, what is meant by the bone of contention?"

Dad "The jawbone my boy"—*Pathfinder*

falls cause injuries that seem serious that medical attention is sought.

With this thought in mind it may be of interest to note that of the total number of 295 injuries due to falls, virtually 15 per cent had a history of a "fall downstairs," and another 15 per cent were injured as a result of falls from fences, swings, and the like

Diagnosis of Injury—The interne assigned to cover the accident room passes on the suitability of each case for admission to the ward. Among other factors that occasionally influence his decision are the availability of vacant beds in the hospital. With few exceptions such accidents that result in minor burns, insignificant bruises or abrasions, evident sprains or minor dislocations are readily taken care of in the accident room of the hospital or in the outpatient department, and, if practical, patients are then referred to their private physicians or clinics

Of the 752 children who were hospitalized 436 had fractures of the bone. Fully two-thirds of the latter had fractures occurring in two or more bones, including 39 children who had fractured skulls. There were 56 admissions on whom a diagnosis of concussion of the brain was made, and this number does not include duplications of the diagnoses of fractured skull

Other injuries in order of their frequency were lacerations, abrasions, and contusions for a total of 103. There were 33 instances of burns and scalds, and 23 children were hospitalized because of separation of the epiphysis, dislocations of joints, and sprains. Swallowing of foreign bodies, bullet and gunshot wounds, and rupture of spleen, liver, or other organs were some other diagnoses made on the children admitted

Case Fatalities—There were 28 fatalities in this series of accidents. Autopsies were performed on 9 cases. These fatalities include 16 instances of fractures of the skull, some of which were associated with laceration of the brain and cerebral hemorrhages. Other causes of death which were noted or were found at autopsy include 2 instances of laceration of the lungs associated with a hemopneumothorax and 2 other instances of rupture of some intra-abdominal organs. Sepsis and gangrene accounted for 2 more fatalities, and there were 2 deaths attributed to shock. The cause of another death was given as shock and hemorrhage. Swallowing rat poison containing arsenic caused the death of 1 child, and another youngster was scalded to death by the overturning of a pot of hot coffee. The history of another death was too meager for notation here.

It is needless to mention that there were other children in the neighborhood who died as a result

of an accident but who were not hospitalized because in effect these deaths occurred instantaneously after their accidents. At times, also, private physicians or other hospitals took care of some of the more serious accidents that resulted in a fatality

In looking over the histories of the hospital case fatalities, it was noted that 5 of the deaths occurred within one hour after admission to the hospital (the shortest duration of hospitalization for any case fatality was thirty minutes). There were 5 other children who passed away between the first and second hour in the hospital. There were 5 more youngsters who succumbed as a result of their injuries from two to six hours after entering the hospital. In addition to these fatalities there were 5 other children who died after being in the hospital from six to twenty-four hours. In other words the histories of the case fatalities indicate that 20 of the 28 deaths occurred within the first twenty-four hours of hospitalization. There were 4 children who died between the first and second day and 4 others who died between the second and the eighth days of hospitalization.

It may be interesting here to mention briefly some of the salient facts pertaining to the fatalities in this series. Of the 28 fatalities herein reported there were 20 boys and 8 girls—1 girl under 2 years of age, 3 girls and 2 boys of the group between the ages of 2 and less than 5 years and 4 girls and 18 boys of the age group between 5 and 14 years.

The ambulance brought 18 of these children to the hospital, 3 came in private motor vehicles, and 7 were carried in. None of this group "walked to the hospital."

Histories of these fatalities revealed that one-half of the group, or 14, died as a result of falls from roofs, fire escapes, windows, or banisters. Auto vehicle traffic accounted for injuries that caused the death of six more children and horse vehicle traffic caused the death of another. A 14-month-old girl soon succumbed after swallowing rat poison containing arsenic. One child was struck on the head by a baseball ten hours before admission and died within a day in the hospital. (Autopsy revealed an epidural hemorrhage.) Another died after being struck on the head by a brick. A 2-year-old child was scalded with hot coffee and died of shock and anuria after being in the hospital for twenty-seven hours. A 13-year-old girl received a gunshot wound in the abdomen, which proved fatal after she was in the hospital ninety minutes. While dancing, a week before his admission to the hospital, a boy, 13 years old, fell on his knee. He developed a subperiosteal abscess of the right femur and died

TABLE 1—TABULATION OF ACCIDENTS ACCORDING TO FREQUENCY

Falls	295
Auto traffic	137
Burns	33
Near drowning and rescued from water	20
Knives and sharp objects	15
Bicycles	15
Miscellaneous	237
Total	762

traffic, and burns—it was noted that, according to age group, 44 of the injuries were accounted for by falls in the group of children under 5 years of age and 251 for children in the age group between 5 and 14 years. Auto traffic caused injuries to 19 children in the age group under 5 years and to 118 in the age group of 5 to 14 years. Burns were responsible for admission to the wards of 16 children under 5 years of age and for 17 children between the ages of 5 to 14 years.

Tabulations of Accidents Occurring Within the Home and Outside of the Home—In all age groups there were 186 accidents that could be classified as occurring at home. Home accidents are considered here to imply that the accidents occurred either in the child's household or in any part of the building containing its home. There were 510 children hurt by accidents that took place outside of the home—for example, in playgrounds, streets, and the like. In 56 cases the histories were too indefinite to ascertain whether the accidents in this series could be classified as occurring in or outside of the home.

Causes of Accidents at Home—Out of the 186 accidents that occurred at home over one-half of them, or 96, were due to falls. The 30 instances of burns and scaldings were the next most common cause of mishaps in the household.

Causes Grouped According to Ages—As a cause of hospitalization, burns were almost as numerous as falls in the group of children under 2 years of age. Of the 33 patients admitted for burns in this series 12 occurred in children under 2 years of age. These 12 cases represent approximately one-third of the total number of children in the group under 2 years of age who were admitted for accidents to the children's wards.

Swallowing foreign bodies, getting fingers jammed in doors, and being hit or struck by some object were some of the other explanations given for injuries that were sustained by the tots under 2 years of age in this series.

Compared with the youngest age group, the children in the group between the ages of 2 and less than 5 years had household accidents of more varied and diverse nature, and many of these were due to evident carelessness of adults in and about the household.

In this age group, and much more so in the age group between the ages of 5 and 14 years, falls were the most common reason given for injuries in the household.

As a matter of interest it may be stated that 79 cases, or 42 per cent of the total number of the 186 home accidents in this series, occurred to children under 5 years of age. It will be remembered also that children under the age of 5 years in this series constitute only 17 per cent of the total. Furthermore the group of 79 home accidents occurring in children under 5 years of age consisted of 48 boys and 31 girls—a ratio of 3 to 2. Compared with the sex ratio of 3 boys to 1 girl in the entire series it would seem that this narrowing of the proportion of boys to girls indicates that under 5 years of age the female child is more prone to have her accident at home.

In regard to accidents that occurred outside of the home, falls, which was the most frequent explanation of accidents in this classification, were responsible for 151 children entering the wards. Auto traffic, with a total of 137 children injured, was the next most frequent cause of accident.

Falls—Even if a very complete and objective history were obtainable in determining the cause of an accident in a child, the circumstances that lead directly to the occurrence of this accident at low for much speculation. This is especially noticeable in taking the history of an accident said to have been caused by a fall. With the exception of those tragic and at times unexplainable falls, which happen from roofs, fire escapes, windows, and banisters, and the less serious falls from chairs, cribs, tables, and the like, it is rare for a child to fall while remaining in a state of quiescence unless there is disturbance by other factors.

With many children self-locomotion is at times associated with an uncalculating and jaunty manner, more particularly when they are preoccupied while running, descending stairs, or climbing fences. Although some may question the advantages derived from such activities particularly when these constitute a hazard—a hazard that becomes very apparent only too frequently as human uncertainties come into play—yet its consequences are tossed aside or laid at the doors of inexperience. (Parenthetically however, who, while watching with curious expectancy, does not sometimes envy the quickened cadence, resulting from varied recreational activities, that readily lends itself to an unstable equilibrium, faulty coordination, and, more commonly, faulty timing—one or all of which may and occasionally do, cause a spill or a fall?) As a matter of fact, with children, falls are literally taken in their stride, and it is only when these

SOME ASPECTS OF THE CHEMOTHERAPY OF PNEUMONIA

MAXWELL FINLAND, M D , FRANCIS C LOWELL, M D , and
ELIAS STRAUSS, M D , Boston

(From the Thorndike Memorial Laboratory, Second and Fourth Medical Services (Harvard), of Boston City Hospital, and the Department of Medicine, Harvard Medical School)

THE specific therapy of pneumonia has been advancing in recent years at a breath-taking pace. Lifesaving agents have become available in rapid succession for increasing proportions of cases of this important and highly fatal disease. Hardly had a few laboratories become acquainted with the methods for concentrating and refining antipneumococcus horse serums and had begun to prepare such serums for the most common types (I and II) when the classification of the pneumococci formerly included in type IV uncovered new types. These are important not only for the frequency and for the severity of the disease they produced but, more significantly, for their amenability to the action of specific serums. No sooner had a few energetic and persistent physicians learned to use these serums properly and become convinced of their lifesaving value when further simple refinements in laboratory technique, culminating in the Neufeld method of typing, increased the diagnostic efficiency that is so essential for early treatment, thus further increasing the lifesaving potentialities of specific serums. Local and state-wide campaigns were undertaken to spread the proper use of these concentrated horse serums and the new diagnostic methods, but some of these campaigns had just got underway when therapeutic antipneumococcus rabbit serums were introduced and the scope and effectiveness of antibody therapy were still further increased. The early reports of the use of rabbit serums indicated striking reductions in mortality in cases due to all types of pneumococci, excepting perhaps type III, but the appearance of these reports almost coincided with the

introduction and rapid spread of the use of sulfonamide derivatives in the therapy of a variety of bacterial infections. While sulfanilamide, the first of these drugs to achieve popularity, proved to be effective only in isolated cases of pneumococcal infections, the clinical trials with sulfa-pyridine have already made it abundantly clear that at least for the immediate future the major therapeutic attack on pneumonia will be through the application of effective chemicals.

Relative Importance of Serotherapy and Chemotherapy

It is well at this time again to raise the question of the place of specific serums in the treatment of the pneumonias. The practical aspects of the therapy of human cases and the fundamental differences in the mode of action of the chemicals and of serum have made it difficult, if not impossible, to obtain an accurate comparison of the value of these agents used separately or in combination. It is, therefore, unlikely that a final or satisfactory solution to this problem will be forthcoming. The brief recent experience with the use of sulfa-pyridine and similar compounds has already taught us that this type of therapy has a wide range of effectiveness, is relatively inexpensive, is simple to administer, and, when properly used and controlled, has a wide margin of safety. Specific antipneumococcus serums, within definitely narrower limits, have also proved highly effective. The problem thus resolves itself into one of this sort: Are there any conditions that can be defined in which lives that might otherwise be lost if drugs alone were used can be saved by the use of serum?

*Read by invitation at the Annual Meeting of the Medical Society of the State of New York
New York City, May 9, 1940*

of sepsis six days after hospitalization. In 1 fatal case the history was too meager for detail.

Disposition of Nonfatal Cases—Of the 724 nonfatal cases 643 were discharged from the hospital with the notation on their charts either of "improvement" or "cured." Fifteen children were discharged with an unfavorable notation regarding the result of their injury. Seven children developed contagious diseases and were transferred to a hospital for contagious diseases, 2 other children were sent to other institutions for further treatment.

There were 57 children who left the hospital without the sanction of the attending staff. When taken home, fully half of these children had their injuries adequately taken care of and were well on their way to recovery. The other children, some of them wearing splints or casts, were removed from the hospital on the responsibility of their parents to be treated by their family physician or at a clinic.

In the course of treatment general anesthesia in one form or another was administered to 329 children. Local anesthesia was given for the same reason to 10 other children.

In only 2 instances were amputations done, and both of these were minor ones on badly mutilated fingers. Regarding the medical complications resulting from the accidents sustained by children in this series, it may be stated that these were truly conspicuous by their comparative absence and are hardly worthy of notation here.

During their recuperative period in the hospital, there were relatively few children in this series who experienced some of the well-understood medical disorders, such as pneumonia (9 cases) and infections in the upper respiratory tract (14 cases). Otitis media occurred in 9 children who were admitted for accidents and in 2 of these children there were mastoid involvements requiring mastoidectomies. Contagious diseases were discovered in 7 of the children, 1 was a case of scarlet fever which was detected

two days after the child was in the hospital for a severe burn.

Over 300 children of this series were given tetanus antitoxin or gas gangrene antitoxin. Sometimes both were administered. Severe reactions worthy of notation developed in 12 of these children.

Summary

A series of 752 cases of accidents in children compiled from the records of the Gouverneur Hospital, New York, between the years 1933 and 1938, inclusive, is reported. Incidents of accidents of hospital admissions of children and incidents of accidents by sex and age group are briefly considered. A classification of their injuries is also presented.

The duration of stay in the hospital by these children is reported. The mortality of these cases is discussed as well as the disposition of the nonfatal cases. A discussion is given also of the accidents occurring in the household and elsewhere.

In this series falls were by far the most general cause of injury, auto traffic was the next most frequent cause, and burns the third most common cause of accidents of the children who were hospitalized.

Appreciation is expressed to the following directors of services for permitting us to review the case histories on their services: Drs. Frank J. McGowan and R. Franklin Carter, surgery; Dr. Walter D. Ludlum, Jr., orthopedics; Dr. William R. Brandon, otolaryngology; and Dr. Morris Friedson, pediatrics.

LET THY LIGHT SHINE

Regardless of the size of the community, a county medical society today is not completely organized unless it has a committee on press relations, believes the *Ohio State Medical Journal*. If your society has made no effort to cooperate with your local newspapers and hold conferences with local editors for the purpose of talking over questions of mutual interest and trying to arrive at a common understanding as to what can or cannot be printed, don't blame the press if the medical profession seemingly is getting a bad break on news and in editorial comments.

EVERY DOCTOR A BOOKKEEPER

Recently a representative of a large record form and business machine company called on the secretary of the state society.

"Do you think that compulsory sickness insurance legislation will pass?" he asked.

"Why?"

"Well, we realize, of course," the representative replied, "that under such legislation there will be forms for every physician, every patient and voluminous records with record-keeping devices. We want to be in on the ground floor."

Wisconsin Medical Journal

to us that it is in the best interest of the patient to use serums whenever feasible and as soon as possible whenever there is jaundice or known or suspected liver disease, when there is nitrogen retention or other evidence of impaired renal function, or when there is granulocytopenia, severe anemia, or other blood dyscrasia. Prolonged drug therapy may then be avoided and the drug discontinued as soon as a critical response to serum is obtained. In the patients who are known to have had serious toxic effects from sulfonamide drugs, it may be advisable to use serum alone. Likewise, in patients who are made very uncomfortable because they do not tolerate the drugs well, the use of serum is indicated and is most advantageous if given without too much delay.

Drug "Fastness"

It is now recognized that pneumococci vary in their susceptibility to the action of sulfonamide drugs. In general, this susceptibility is a property of the individual strains rather than of the types of pneumococci. Our studies of certain phases of this problem will be published separately, but a few points of clinical interest may be mentioned here. Our studies have suggested that comparative sulfapyridine resistance is somewhat more frequent among strains of types II, III, and V pneumococci, and this corresponds with our clinical observations. Direct laboratory tests, however, have revealed this property among strains of several additional pneumococcus types. A number of cases have been observed in which relative resistance to drugs developed or increased in the course of therapy. This may have accounted for failures to respond in certain cases and for relapses during therapy in other cases. When strains were tested against sulfapyridine, sulfathiazole, and sulfamethylthiazole and were found resistant to one of these drugs, they were about equally resistant to the others. This was true for strains found resistant when first isolated from patients before treatment as well as for strains that became resistant in the course

of treatment or were made resistant to any one of these drugs by suitable cultural methods.

Fortunately, the response of type-specific serum is independent of this property, and patients with resistant strains have shown rapid clinical improvement following its administration. From the point of view of therapy, until one can learn to recognize strain resistance quickly and accurately, it would seem wise to be prepared for serum therapy in every case and to use it whenever twenty-four to thirty-six hours of active chemotherapy has failed to bring about definite clinical improvement.

Since the isolation and identification of pneumococci from sputum and blood becomes increasingly difficult following chemotherapy, it is highly important to make every effort to obtain these materials *before any drug is administered*. Should serum therapy then become desirable or necessary, much valuable time will be saved.

New Sulfonamide Derivatives Sulfathiazole

In the beginning of this paper we noted some of the landmarks in the recent progress made in the specific therapy of pneumonia. We mentioned only the major advances concerning serums and the sulfonamide drugs that culminated in the development of highly potent rabbit antiserums for all pneumococcus types and in the general use of sulfapyridine. During this same period there have been proposed, as panaceas in the treatment of pneumonia, many other agents—physical, chemical, and biologic—which have not been mentioned because they have not gained wide acceptance. At the present time it is not to be assumed that the last word in the specific treatment of pneumonia has already been said. There is still room for improvement, and, as the search for other and better chemicals and for new avenues of approach continues, further progress may be anticipated. The first and obvious line of attack and the one most likely to yield results quickly is the

Or, are there conditions in which the use of serum can contribute sufficiently to the comfort of the patient and possibly increase his chances for recovery sufficiently to warrant its use, in addition to the drug?

Theoretically, the combination of chemicals and specific serums should be the most effective therapy in the pneumococcal pneumonias. It is now generally accepted that drugs like sulfapyridine may be effective against pneumococci without the mediation of any immune mechanism but that a specific antibody and an intact immune mechanism considerably enhance the effectiveness of the drugs. This has been demonstrated *in vitro* by experiments in freshly shed blood and in bone marrow cultures and by the treatment of experimental infections in animals. It is also recognized that the degree of infection and the concentration of the drug set limits to the effective action of sulfapyridine which can be greatly exceeded by the additional use of serum.

From the reported results of the treatment of human cases, on the other hand, it is difficult to draw any definite conclusions. Most of the reports appear on the surface to indicate a superiority of sulfapyridine alone over serum and even over the combination of serum and sulfapyridine. Adequate data are not always presented, however, and the results may even be misleading until all the essential factors are considered. This is particularly true with respect to patients treated with the combination of serum and drug, since for the most part they represent failures, or what might be called threatened failures, of chemotherapy, the serum being given as a last resort. While striking clinical improvement frequently follows the use of serum under such conditions, it is not surprising that the mortality in cases treated in this manner is still high. Moreover, if such cases are excluded from calculations of the mortality in drug-treated cases, the latter mortality is correspondingly lowered.

A detailed analysis of the clinical re-

sults of treatment with specific serums and sulfapyridine, used separately and in combination in 565 cases of pneumococcal pneumonia observed during the 1938-1939 season at the Boston City Hospital,¹ led us to the following tentative conclusions.

1 For the large majority of cases of pneumococcal pneumonia in adults, specific serums and sulfapyridine are about equally effective when used separately.

2 For most of the cases with the worst prognosis, the combination of serum and sulfapyridine is more effective than either agent used alone.

3 The best effects of combined therapy in the severest cases are realized only if the administration of serum is not delayed for more than twelve hours after the drug therapy is started.

The cases in which the combined therapy was more effective than individual remedies included the following:

1 Bacteremic cases of three categories, namely (a) in patients over 50 years of age, (b) when treatment was begun late, or (c) when the blood yielded moderate or large numbers of pneumococci.

2 Cases with more than one lobe involved.

3 Patients over 60 years of age who had moderate or severe infections.

4 Some of the severe cases of types II, III, and V pneumococcal pneumonia.

There is some evidence that sulfapyridine therapy may reduce renal and liver function and may also affect the red and the white blood cells. These effects are probably of no clinical significance in the large majority of cases, but they may become important if therapy is prolonged or if there is underlying manifest or subclinical impairment of the organs involved. Serious difficulties may also result from treatment of patients who have shown certain toxic effects—for example, granulocytopenia or dermatitis—from previous administration of the same or similar drugs. This is true in spite of the fact that patients with such a background have been treated successfully with sulfapyridine alone. It has seemed

total sulfathiazole was high. The sodium salt of sulfathiazole was used in occasional patients who were extremely ill or who were vomiting excessively. It was also possible to give the drug subcutaneously. About 5 Gm of the drug could be put into solution in 1 liter of 5 per cent glucose solution after the latter had been brought to a temperature of 90 to 100 C. Boiling was avoided after the addition of the drug.

The numbers of patients who showed various toxic symptoms during the administration of sulfathiazole are shown in Table 2. Nausea and/or vomiting occurred in 75 (45 per cent) of all the 165 patients treated with sulfathiazole. This represents a frequency of about one-third less than that observed in cases treated with sulfapyridine (66 per cent), but the severity and duration of the vomiting were also less among the sulfathiazole-treated cases. Other toxic effects were, in general, very similar to those seen with sulfapyridine-treated cases. Drug rashes, however, were more frequent in the present series. Of the 8 patients with dermatitis, 5 had a typical erythema nodosum type of reaction, and 3 of the latter had, in addition, a butterfly distribution of a tender erysipeloid lesion over the nose, lower lid, and malar regions, but the conjunctivas were clear. Two of these rashes occurred on the second day of sulfathiazole therapy in patients who probably had no previous sulfonamide drug therapy. Crystals of sulfathiazole (probably both acetylated and nonacetylated) were noted on one or more days during treatment in the voided urine of 23 patients, including all of the 5 patients who had hematuria while taking the drug. Of the 6 patients with nitrogen retention, one was a diabetic in acidosis who had an elevated nonprotein nitrogen level before treatment. The others had levels of 50 to 70 mg per hundred cubic centimeters of nonprotein nitrogen, which dropped to levels of from 25 to 38 mg after treatment was stopped.

On the whole, the impression gained from this limited experience was that sulfathiazole and sulfapyridine are equally

TABLE 2.—TOXIC EFFECTS NOTED IN 165 PATIENTS TREATED WITH SULFATHIAZOLE

Symptoms	Cases
Nausea	12
Vomiting (mild)	33
Vomiting (moderate to severe)	30
Drug rashes (include 5 with erythema nodosum and 1 with herpetic stomatitis ?)	8
Drug fever	7
Nitrogen retention (more than 25 mg per 100 cc.)	6
Hematuria (gross 2 microscopic, 3)	5
Sulfathiazole crystals in urine	26
Anemias (drop of 24 to 40 per cent in hemoglobin)	6
Leukopenia (white blood count 2 300)	1
Dizziness (marked)	2
Psychoses while afebrile and during drug therapy	3
Jaundice (1 doubtful case)	2

effective in the treatment of the pneumococcal pneumonias. There was appreciably less vomiting, but a higher incidence of drug fever and drug rashes. Other toxic effects were about as frequent with the one as with the other.

Are Pneumonia Deaths Being Controlled?

Let us turn now to what may be considered a "public health" aspect of the specific therapy of pneumonia. Recent "pneumonia control programs" have as their primary objective the reduction of the high death rate from this disease to the lowest level attainable with optimum therapeutic methods. Practically, these programs are directed mainly to the diffusion of the best available knowledge concerning diagnosis and treatment. In many instances they have also attempted to provide some of the resources and facilities, the use of which is so essential to the physician if he takes the fullest advantage of the best diagnostic and therapeutic procedures. Leaving out for the moment the problems of prevention or even of development of better therapy—problems with which most of the programs have concerned themselves little or not at all—it may be pertinent to ask, now that simple and effective therapy is available, whether the main objective of these programs has been fulfilled and also whether there is any further need for these or for similar undertakings. In order to answer these questions it is essential to know, first, what the maximum reduction in death rate would be if the best available therapy

TABLE 1—PNEUMOCOCCIC PNEUMONIA TREATED WITH SULFATHIAZOLE

	Number of Cases	Number Died
All cases	104	12
Under 40 yr	43	2
40–59 yr	49	7
60 yr and older	12	3
Bacteremic cases	20	4
Nonbacteremic cases	84	8

search for new sulfonamide derivatives having greater potency, less toxicity, and a wider range of efficacy.*

One of the sulfonamide compounds that has been offered as giving promise in this direction is sulfathiazole. This compound and its methyl derivative have been found to be definitely superior to sulfapyridine in the treatment of staphylococcal infections in experimental animals and probably also in human cases. Both of these compounds are acetylated in the body to a considerably less extent than sulfapyridine. They are both probably as effective as sulfapyridine against pneumococci and therefore have been used rather widely for clinical trials in the treatment of pneumonia. Sulfamethylthiazole, however, is probably more toxic than sulfathiazole, and, since it is also considerably less soluble and offers no great advantage over sulfathiazole (as far as it is now known), we have limited our own clinical trials at the Boston City Hospital to the latter drug. A detailed account of the clinical results obtained with this drug during the entire season is reserved for later consideration elsewhere. Because of the widespread interest in this preparation, however, we present here a brief résumé of our experience with this drug in the treatment of pneumonia and of the toxic effects observed in the various cases in which it was used.

Sulfathiazole was used exclusively on four of the twelve medical wards, sulfapyridine being used on the other wards. Prior to April 1, 1940, 165 adult patients,

including 104 patients with pneumococcal pneumonia, were treated with sulfathiazole on these four wards. The pneumococcal pneumonias are listed in Table 1 according to age and the results of blood cultures taken before treatment. There were 12 deaths (11.5 per cent) among these 104 cases, as compared with 48 deaths (12.6 per cent) among 382 cases of pneumococcal pneumonia treated with sulfapyridine from July 1, 1939, to March 31, 1940. Specific serums were used in some of the severe cases in both groups, but usually only after twenty-four hours or longer of drug therapy resulted in little or no improvement in the condition of the patient. It is of interest that during the 1938–1939 season the death rate in 354 cases receiving sulfapyridine, including those who received serum in addition, was 20 per cent. This striking difference in mortality in sulfapyridine-treated cases in two successive seasons would indicate that great caution should be exercised in the comparison of results obtained in one season with those obtained with other remedies in a subsequent season.

The clinical response to sulfapyridine and to sulfathiazole, each of which was used in exactly the same manner, was almost identical. The same dose was used in almost all of the cases—namely, an initial dose of 2 Gm followed in two hours by 1 or 2 Gm. and then 1 Gm. every four hours, the drug being discontinued after the temperature and pulse rate reached normal and remained so for about forty-eight hours. Fluids were not restricted. The levels of the drug in the blood ranged somewhat lower in sulfathiazole-treated cases than in those treated in a similar manner with sulfapyridine. In most cases the concentration of free sulfathiazole in the blood was between 2 and 6 mg per hundred cubic centimeters. In a few patients, levels of 1 to 2 mg were found, although the clinical response was good. Levels above 20 mg were noted in some patients who had concomitant nitrogen retention. The amount of conjugated sulfathiazole in the blood was usually small, even when the level of

* It may be worth mentioning that the superiority of sulfapyridine over sulfanilamide in the treatment of pulmonary infections regardless of etiology is so great that there seems to be little excuse for continuing the use of sulfanilamide in such cases. The exception to this is perhaps in cases that have been proved to be due to hemolytic streptococci and in which there is good reason to avoid or to discontinue the use of sulfapyridine or other drugs with similar action.

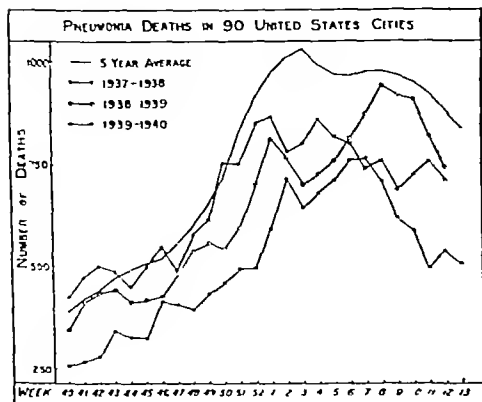


FIG 3

ratios since the pneumonia programs began, despite fluctuations in incidence. Part, if not all, of this gradual drop may have been the result of specific serum therapy and may be attributed directly or indirectly to the pneumonia programs in these states. The figures for 1939, while continuing to reflect the same trend, do not show any further and more striking change in the deaths or in the case-death ratios such as might be anticipated from the full beneficial effects of chemotherapy during that part of the year after sulfapyridine was released for general use.

Further and more current data were taken from weekly reports of "pneumonia deaths" in ninety large cities in the United States as given in the *Public Health Reports*. The data for the fall and winter months of the past three years and of the five-year average for the corresponding weeks in 1933 to 1938 are shown in Fig 3. The same trend for the past three years is noted in the figures from Massachusetts and New York State. Here, again, the drop in deaths during the present season over the numbers for the past two years, while appreciable, is still far from reflecting anywhere near the attainable goal.

While we are fully aware of the many pitfalls inherent in the collection and interpretation of these data, their implication seems quite clear—namely, that the population as a whole is not yet receiving the fullest possible benefits of the lifesaving remedies available for patients

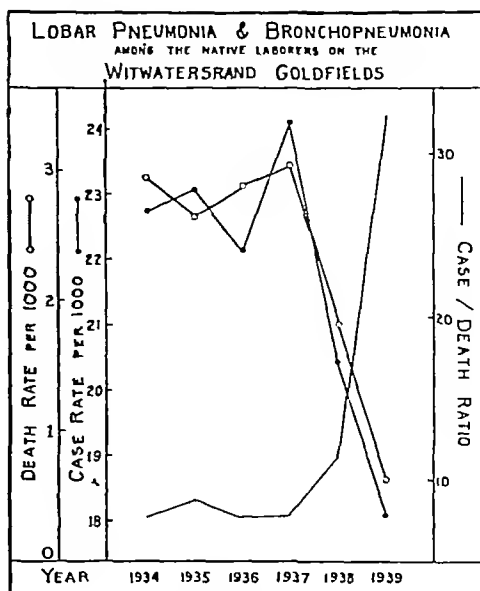


FIG 4.

with pneumonia. That far greater reductions in death rate are possible on a large scale, with drops in the case fatality rates closely approximating those which might be anticipated from the clinical reports, is indicated by a survey of David Ordman,² which has been published recently in South Africa. This report deals with the incidence and deaths from respiratory infections among more than a quarter of a million native laborers in the Witwatersrand Goldfields during the past six years. The data from this report that concern the case rates and death rates from lobar pneumonia and bronchopneumonia are charted in Fig 4. Sulfapyridine was first used there experimentally during 1938 and was put into general use during the 1938-1939 season. The striking drop in the number of deaths and the more than threefold increase in the case-death ratio in this rather closed community are excellent illustrations of the extent to which the remedy may actually influence the death rate from pneumonia in a given population.

The conclusion seems inevitable that the efforts to control the death rates from pneumonia should not be relaxed. The

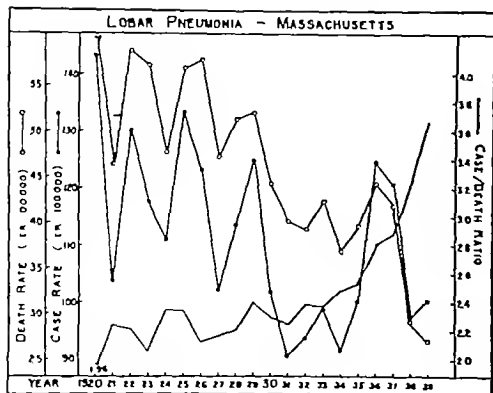


FIG 1

were utilized to the fullest extent, and, second, how closely this lowest attainable death rate has been approximated in the population at large

While the two latter questions could probably be answered with great accuracy by means of a careful survey made with rigid statistical control, the data for the precise answers are not yet available. They are not absolutely essential, however, for the argument at hand. The almost universal applicability to pneumonia of the present-day lifesaving remedies makes the estimation of the maximum attainable reductions in mortality somewhat simpler now than was possible in the past. Such estimates are necessarily rough but fair and workable.

From the results in the several thousand cases of pneumonia reported in the literature in the brief time that has elapsed since the introduction of sulfapyridine, it may be most conservatively estimated that the case fatality rate in all pneumonias can be cut to at least half of the previous case fatality rate by the proper application of the best present-day therapy. Most of the reports would suggest that the case fatality rate might be reduced to one-fourth or even less with the use of sulfapyridine alone. Since specific antipneumococcus serums have been used, in the past, only in a comparatively small percentage of all pneumonia cases, the effects of this form of therapy should not obscure the effects of the universal application of chemother-

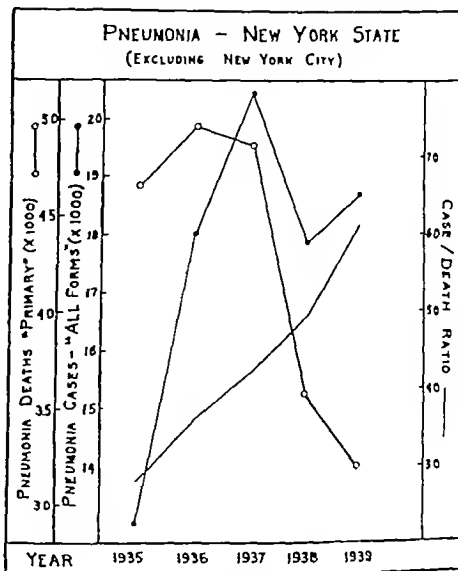


FIG 2

apy, even if the fullest effect of serums on the death rates was obtained in those cases in which they were used.

In order to get some idea of the extent to which the recent lifesaving remedies actually have influenced the death rate from pneumonia in the general population, we have reviewed certain data bearing directly on this point. These data were obtained from three different sources: from Massachusetts, New York State, and the United States Public Health Service. In Fig 1 are shown the data for "lobar pneumonia" in Massachusetts, with the annual case rates, death rates, and case-death ratios charted for a twenty-year period beginning 1920. The pneumonia control program in that state began in 1931. The data for the State of New York (exclusive of New York City) are shown in Fig 2. They cover the five-year period beginning 1935, when the program for pneumonia control was initiated there, and include cases of pneumonia of all forms and deaths from "primary pneumonia".* In each instance there was a steady drop, year by year, in the deaths and a rise in the case-death

* The data for New York State were furnished by Dr. Edward S. Rogers, director of the Bureau of Pneumonia Control, and the Massachusetts figures were furnished by Dr. Roy F. Peemster, director of the Division of Communicable Diseases.

WORKMEN'S COMPENSATION

BEGINNING July 1, 1940, the fees for attendance at hearings will be fixed by the Industrial Board

Rules and Regulations governing hearings before the Department of Labor have been established by the Industrial Board and are herewith appended

DAVID J. KALISKI, M D , *Director*

June 7, 1940

Regulations Adopted by the Industrial Board Establishing a Uniform Fee Schedule to be Used in Fixing Fees for Attendance of Physicians at Hearings or Proceedings Under the Workmen's Compensation Law

Law

Section 13-f-(2) Whenever his attendance at a hearing is required, the physician of the injured employee shall be entitled to receive a fee from the employer, or carrier, in an amount to be fixed by the Industrial Board in addition to any fee payable under Section 120

Regulations

The provisions of Section 13-f-(2) shall apply only to the physician selected to treat the claimant under the provisions of Section 13 a-(1)

Such physicians are entitled to a fee for attendance at a hearing when subpoenaed by any party in interest or when directed to attend by a Referee or when produced by an insurance carrier or employer

When the physician is a general practitioner his fee shall be ten (\$10) dollars plus mileage (outside New York City) and a fee of five (\$5) dollars for each additional case on which he testifies at the same appearance.

When the physician is a qualified specialist and is so designated, and has examined consulted or treated under his specialty, his fee shall be twenty-five (\$25) dollars plus mileage (outside New York City) and a fee of twelve dollars and fifty cents (\$12 50) for each additional case on which he testifies at the same appearance.

A physician, other than the attending physician, who testifies at hearings or examines claimants or participates in examinations for evidential material for compensation hearing purposes only, may accept fees for such services from claimants employers, or carriers In no event shall this fee be fixed by the Referee.

Nothing herein contained shall limit or abridge the power of the Industrial Board in a proper case, where the circumstances warrant, to fix a fee in an amount other than as herein contained.

These regulations shall become effective July 1, 1940

weapons are available. They have been tried and have proved effective. It is likewise clear that these weapons have not yet been wielded to the fullest advantage. There is every reason to expect much further progress through continued and coordinated efforts on the part of physicians, medical societies, and health departments.

References

1. Ann Int. Med 13 1567 (Mar.) 1940
2. Ordman, D. Proc. Transvaal Mine Officers Assn. 19 (Nov.) 1939

Discussion

Dr Edward S. Rogers, *Loudonville*—Inasmuch as Dr Finland's very stimulating paper divides itself into a presentation of two somewhat different phases of the subject, I shall confine my comments to the last part which was related to the administrative problems of the future of pneumonia control.

Those of us who have been close to this work have recently become very much aware of the difficulties of interpreting the results of our programs and of setting a rational goal for the future. In the past, perhaps, some of us have erred in expressing the hope that we might eventually accomplish a reduction of 66 per cent, or even more, in the recorded mortality from pneumonia. In so doing we were unmindful of the fallacies inherent in our systems for vital statistics. We now realize that pneumonia is not only a group of bacterial diseases but is, indeed, a group of conditions in which definition assumes a role of great importance. We did not appreciate then, as we do now, the fact that a large portion of the deaths from so-called pneumonia are derived from that group of patients who, dying from some totally unrelated cause, present as a terminal event certain signs suggestive of pneumonia which, however, may or may not be due to bacterial invasion in the usual sense. This type of case presents a real diagnostic problem, even at the bedside, and much more of a problem to those concerned with its classification under the circumstances remote from the patient. In studies we are now conducting, we find that this group of ill-defined pneumonias may constitute as much as 20 to 30 per cent of the pneumonia deaths in a given area.

We must realize that the current methods of

specific treatment cannot be expected to result in a reduction of mortality in this rather vague but large group, which is comparable to that possible in the more clear-cut pneumonias. For the former, perhaps the most effective pneumonia control measure possible would be a bookkeeping measure which would result in their distinct separation from acute infectious pneumonias of known etiology.

Dr Finland has made a most thought-provoking reference to the effectiveness of modern methods of treatment, particularly chemotherapy, in the gold mines of South Africa. While I feel that there are points of a discursive nature in the construction of Dr Finland's interpretation, I am completely in accord with his conclusions. In these, you will recall, he indicates that there is a great deal more to be done in obtaining the most effective application of the scientific methods for the treatment of pneumonia which are now at hand.

Our recent experiences with the relative effect of treatment applied under the comparatively favorable circumstances of a well-equipped general hospital with a highly trained staff and treatment conducted under less favorable circumstances outside of such an institution lead us to believe that there remains a great deal to be accomplished in making available both the material and methods as well as the opportunity for the application of these most recent advances. Thorough inquiry into the reasons for this apparent difference and the immediate application of measures for their correction constitutes one of the most important and probably difficult tasks ahead.

These future "mopping up" activities must be expected to progress much more slowly and in a less spectacular manner than have the efforts of the past five years. It is quite essential to recognize this in order that we may continue to pursue this particular problem with the vigor essential to its completion. There also lies ahead the challenging possibility of the development of preventive measures whether these be in the field of immunization or the practical application of epidemiologic methods. It would be unwise to let the rapidity of the recent decline in pneumonia mortality divert us from our original goal, for if this should happen I fear that we shall find that we have completed a *pneumonia campaign*, while what we intended planned and need is a *pneumonia control program*.

"The more is given the less the people will work for themselves, and the less they work the more their poverty will increase."—*Leo Tolstoy in 1892*

It is estimated that 25 000 deaths from cancer could be prevented each year if people were fully informed and took advantage of existing knowledge of the disease.

Medical News

School Health

LOUIS A. VAN KLEECK, M.D., Manhasset, New York

(Presidential Address delivered before the Annual Conference of the New York State Association of School Physicians, Saratoga Springs, New York, June 24, 1940)

THE progressively increasing interest that is being manifested in the school health problem may well be taken as a proof of the great importance of preserving and improving the health status of the school child. Organized medicine during the past year has made a careful and exhaustive study of the program as established by the Department of Education with the result that more and more of the general public, parents, practicing physicians, and various organizations are cooperating in a united effort with one united aim. The position of the school physician has likewise increased in responsibility and prestige. To quote from an editorial in the *New York State Journal of Medicine*, January 15, 1940: "The school physician should see that every child has a thorough annual examination and that defects found are corrected, he should issue regulations governing light, heat, ventilation, and cleanliness and take all necessary steps to prevent the spread of communicable disease. Essentially, however, his role is executive and educational, the school should not maintain clinics or provide treatment." This position on the part of the school physician makes it imperative that he create and maintain a close cooperative and constructive relationship with every practicing physician in his community.

Too much emphasis cannot be placed on his role as an executive or as an important factor in the entire educational program. This requires complete coordination between the health educational faculties of the school and also of the department which devotes its work to the health service. There are throughout the state only a limited number of physicians who are trained in educational procedures. By and large the average school physician is trained along medical

lines and is not qualified as an educator. For this reason it seems apparent that the medical service should be delegated to those who by training are qualified in medical matters and that the educational program should be placed in the hands of those who have had training along those lines. If such a procedure is adopted, it will be necessary that these two departments work in absolute unison and cooperation with each other.

Close relationship with the Department of Health is of paramount importance as the school child, who is a citizen in the community, cannot be isolated from the community during the few hours that he is attending the school, also the problem of contagious disease within the school is a community-wide problem and not limited within the bounds of the school property.

The rapid progress of modern medicine along the lines of scientific and laboratory investigation should be made more and more available as diagnostic aids to the school population. The importance of the responsibility that rests upon the school physician cannot be disregarded but must be taken seriously, and he must avail himself of every known means to improve his diagnostic methods and to pursue the follow-up course of a child entrusted to his supervision during school hours.

In these days of tragedy and chaos, when democracy, civilization, religion, culture, and, in fact, all the things for which civilization stands are being weighed in the balance, we must examine more closely and observe more carefully the condition and the progress of the health of the school child, because unto these children who are now in our keeping rests the future responsibility of the nation, civilization, and the race.

Tuberculosis Mortality in Cities—A Challenge

THE recent meeting of the Committees on Tuberculosis and Public Health of the State Charities Aid Association in New York City opened a new epoch in the campaign against tuberculosis, says *Health News* (Albany). Plans are being made for an intensified program including case finding, hospitalization, and domiciliary control.

The need for greater effort in the application of these measures is apparent in all countries of the state, but in cities the problem assumes significant proportions. While the 1939 resident death rate for upstate New York was 36.4 per 100,000 population and the rural rate, representing 2,225,000 of persons only 25.7 per 100,000, the rate in many of the cities with populations in excess of 50,000 presents a challenge.

Dr. Robert E. Plunkett, general superintendent of tuberculosis hospitals, reports that a study of the annual average tuberculosis resident death

rates for the three-year period 1937 to 1939 in the twelve upstate New York cities of more than 50,000 population reveals that Buffalo has the highest mortality, 54 per 100,000 population. Albany has the second highest rate, 53.9, Troy, the third, 53.4, Yonkers, the fourth, 42.1 and Schenectady, the fifth, 41.1. Other cities in order of their death rates are Rochester, 37.1, Utica, 35.2, Syracuse, 34.8, Mount Vernon 31.6, Niagara Falls, 30.8, Binghamton, 30.7, New Rochelle, 29.2.

Indifference on the part of public health authorities in the face of these rates may be looked upon as lack of appreciation of the possibilities in prevention of a sound tuberculosis case-finding and treatment program. Dr. Plunkett states that if the present knowledge regarding the prevention of this disease were translated into progressive vigorous action by health authorities and physicians, the enormous human and eco-

Maternal Welfare

Handling the Third Stage of Labor

ONE of the chief causes of puerperal hemorrhage is the mismanagement of the third stage of labor—the period from the birth of the child to the delivery of the placenta. We have no less an authority than J. Whitridge Williams for this statement. This stage is divided into two parts: first, the separation of the placenta, and second, its expulsion. The failure to recognize these two actions, viz., the physiology of the third stage, is responsible many times for hemorrhage. The signs of placental separation are quite clear and distinct. They are recurrence of uterine contractions, rising of the fundus, lengthening of the cord, and a spurt of blood.

The length of the third stage, Williams says, is one-quarter to one-half hour. Placental separation in most cases occurs earlier than was formerly thought, probably within the first five minutes following the birth of the child. The placenta is pushed into the cervix or through it into the vagina.

Absolutely spontaneous expulsion of the placenta is not common, particularly not in a patient who has had anesthesia during the second stage. After complete separation there is no reason to delay its expulsion. As soon as the baby is delivered the hand of the physician or nurse should be placed over the fundus so that separation of the placenta may be recognized and to make certain that the fundus does not rise to too great a degree. The latter event would indicate ballooning of the uterus with contained blood. The fundus should not be manipulated or massaged in the normal case—simply controlled. Undue manipulation of the uterus with partial separation invites hemorrhage.

When should the placenta be expressed? We were once taught to wait one-half hour. This is not, however, a question of time but of complete separation; it may be three minutes or three

hours. After separation the placenta should be expressed by a downward and backward piston-like movement on the fundus without traction on the cord. Inversion of the uterus, as well as hemorrhage, may follow too vigorous squeezing and pressure or traction on the cord when a partially separated placenta is present.

It is common practice to repair a laceration or an episiotomy wound while waiting for the placenta, leaving the care of the fundus to a nurse. This is not good practice. The physician's time and attention should be directed to the management of the third stage until its completion, and only then should he do the repair work. While he is absorbed in suturing an episiotomy, it frequently occurs that considerable bleeding has taken place above a placenta blocking the cervix. Then, when the placenta is expelled it is accompanied by a fairly large gush of blood, the result of not having expressed a placenta that has for some time been separated from the uterus.

Should oxytocics be given? If so, when? As soon as there are signs of separation of the placenta, 1 cc. of obstetrical pituitrin should be given intramuscularly, preferably in the anterior aspect of the thigh with a needle long enough to insure intramuscular injection. Contraction of the uterus will follow in about one minute. Ergotrate $\frac{1}{160}$ grain (0.2 mg.) may be substituted for pituitrin or supplement its action being given a few minutes later.

Watching the Fundus

The uterus should be held for one-half hour after the third stage has terminated. Massage is not indicated unless there is bleeding accompanied by a relaxed uterus. The uterus should then be seized, with four fingers behind it and the thumb in front, brought upward and forward over the symphysis, and held there until bleeding is controlled.

INDISCRIMINATE LABORATORY EXAMINATIONS

In the hospital all manner of tests can readily be performed in obscure or doubtful cases, but in private practice the economic factor usually restricts one to the tests that most obviously offer practical assistance. Fortunately, however—and this is apparently contrary to much present-day opinion—good medicine does not

consist in the indiscriminate application of laboratory examinations to a patient but rather in having so clear a comprehension of the probabilities and possibilities of a case as to know what tests may be expected to give information of value.—Francis W. Peabody, *Doctor and Patient*, New York, The Macmillan Co., 1939

The society will recess for the summer, meeting again in September—*Reported by H P Carpenter, M D, Secretary*

Essex County

The semi-annual meeting of the Medical Society of the County of Essex was held at the Deershead Inn at Elizabethtown on June 4. A woman's auxiliary for Essex County was formed after addresses by Mrs G Scott Towne, former president of the State Woman's Auxiliary, and by Mrs Richard Bullard, both of Saratoga County, and by Mrs Johnson of Cayuga County. Dinner followed the business meeting. The scientific session was held following dinner and consisted of an address on diagnosis of tuberculosis by Dr Richard Nauen, of the New York State Hospital for Incipient Tuberculosis, Ray Brook, New York, and by the presentation of a sound film on the same subject.

Dr Harold J Harris, of Westport, was ordered to Brooklyn Naval Hospital for two weeks' training duty beginning June 15 in connection with his commission as Lieutenant Commander in the Medical Corps of the United States Naval Reserve—*Reported by Harold J Harris, M.D., Secretary*

Franklin County

Dr William N Mac Artney, 78, who became nationally known as author of the book, "Fifty Years a Country Doctor," died at his home in Fort Covington on June 15, following a stroke of paralysis.

"Death came peacefully to the venerable physician who had so often deterred its visit to homes in the border area where he had conducted a general practice for a half century," says the *Malone Telegram*.

"His passing brought a deep sense of loss to his home community, a grief that will be shared by the thousands who had come to know and love the physician through the medium of his book."

Jefferson County

Members of the Jefferson County Medical Society held their annual outing and dinner at the Frontenac Crystal Springs Hotel.

A sports program was held during the afternoon with a chicken dinner served in the hotel. A social evening followed the dinner.

The major sports event on the afternoon program was a softball game between a team composed of Watertown physicians and an aggregation made up of county physicians. After ten innings the game was called with the score tied.

During the evening a brief business meeting of the association was held. Dr Harold L Gokey, of Alexandria Bay, president, presided. The meeting was the last until September.

Livingston County

At the meeting of the Livingston County Medical Society at Craig Colony, Sonyca, New York, June 6, a brief report of the meeting of the House of Delegates in New York City was given by Dr Charles Gullo, delegate. After a short business meeting Dr Frederick W Bush, Rochester, presented an interesting discussion of child health and the present status of immunization procedures—*Reported by Alden J Townsend M D, Secretary*

Monroe County

Governor Lehman has named Dr Albert D Kaiser, president of the Monroe County Medical Society, a member of the temporary legislative commission to formulate a long-range state health program.

Dr Kaiser will succeed the late Dr Thomas Farmer.

The commission has been in existence two years, and its life was extended for another year by the Legislature in March. Its purpose, according to Dr Paul Lemhcke, district state health officer, is to study the state's facilities for medical care through hospitals, physicians, and welfare and health departments as a basis for a state health insurance program.

Its findings will guide the Legislature in drafting comprehensive medical measures for all people of the state, covering the indigent group as well as those able to pay medical costs.

A feature of the scientific program of the annual meeting of the Rochester Academy of Medicine was the presentation of Academy prize award papers by the winners, including Dr Lynn Rumbold and co-winners Drs Herbert R Brown, Jr, and William F Clark.

Dr Brown and Dr Clark, winners of the Bausch and Lomb award, presented the conclusions of a paper dealing with "Plasmic Specific Gravity and Its Useful Applications in Clinical Medicine."

In summarizing the paper, Dr Charles B F Gibbs, chairman of the Award Committee, stated that the conclusions of Dr Brown and Dr Clark were the result of two years' research in the Strong Memorial and Municipal hospitals. The award was given for presenting a new method of measuring the fluid needs of the patient. The data presented were gathered from more than 200 patients and included over 1,500 plasmic specific gravity determinations.

Montgomery County

The semi-annual meeting and dinner of the Medical Society of the County of Montgomery was held at Fort Plain on June 18. Dr S L Homrighouse, president, presiding. Dr L Whitting Gorham, Albany, was the guest speaker. His subject was "Differential Diagnosis of Coronary Occlusion," illustrated with lantern slides.

New York County

At its annual meeting on June 7 at the Waldorf-Astoria, the American Laryngological, Rhinological and Otological Society bestowed its medal of honor on Dr James Sonnett Greene, founder and medical director of the National Hospital for Speech Disorders in New York City. This distinction was given because of Dr Greene's distinguished pioneer service in the field of speech defects.

Oneida County

Dr Martin T Powers, 60 of Utica, widely known x-ray specialist and chairman of the New York State Roentgenology Society, died in St Elizabeth Hospital on June 14 of coronary thrombosis.

Dr Powers had practiced roentgenology in Utica since 1921 and prior to that was an active physician in Rome and Westernville. He

conomic waste resulting from neglect of this disease could be minimized

In the light of present knowledge and as a result of experience, the substantial reduction of tuberculosis will depend on intensive application of many measures, including

1 Utilization of every medium of public information and agitation to increase the enthusiasm for fighting tuberculosis that was characteristic of early days of the campaign

2 A "triple alliance" of tuberculosis hospitals, health departments, and practicing physicians to intensify the frontal attack against tuberculosis as a communicable disease

3 Earlier diagnosis and prompt reporting, with a complete register of tuberculosis cases in each administrative area

4 Active and progressive case finding among family contacts, especially the adults

5 Prompt and more prolonged hospital treatment of patients, with rehabilitation of the patient starting the day he enters the hospital

6 Adequate relief and social service for patients and their families in economic need

7 The employment of additional public health nurses, supplemented in every section of the state by trained tuberculosis supervising nurses

8 Utilization of every administrative and

technical service for research contributions to tuberculosis control

The first step in tuberculosis control is case finding. Every city, as well as every county, therefore, should extend its facilities for early diagnosis, including x-ray, so that such service may be readily and easily available, especially to every adult. The examination of all persons who have been in contact with a case of tuberculosis is of major importance. Infection is found more frequently among those who have been associated with persons suffering from the disease.

Dr Plunkett states further that he knows of no study of the economic aspects of tuberculosis that has not brought into bold relief the vicious circle of poverty and tuberculosis. Tuberculosis begets poverty and poverty begets tuberculosis. The practice of spending money for the hospital treatment of a patient and at the same time allowing the infected members of the family to exist in crowded and poor home environment and on not more than a mere sustaining diet is shortsighted and expensive. It costs pennies to prevent and dollars to treat. Ways and means must be found to assist the families of the tuberculosis patients in a manner free from the ordinary home-relief requirements and customs and to provide sufficient financial aid to prevent the dire consequences of the infection.

County News

Albany County

The scientific session of the Medical Society, County of Albany, on June 19, heard a paper on "Traumatic Asphyxia" by Dr Albert Vander Veer. It included a brief review of the literature with a discussion of etiology, symptoms, and treatment, and a report of 1 case. Discussion was opened by Dr Christopher Stahler, Jr.

A paper on "Modern Methods of Handling Prostatic Obstruction" was presented by Dr William A. Milner. It was an evaluation of transurethral resection based upon 650 cases treated by this method and briefly covered the medical and surgical treatment of prostatic hypertrophy from preoperative care to end results, including operative treatment, pathology, morbidity and complications, and mortality. Discussion was opened by Dr James S. Lyons.

St Bonaventure's College, Allegany, New York, at the annual commencement on June 4, conferred the honorary degree of Doctor of Laws on Dr Arthur J. Bedell, of Albany.

Bronx County

The annual meeting of the Bronx County Medical Society was held at Burnside Manor on June 19. Dr Paul M. Wood gave an address on anesthesiology, with interesting exhibits. Discussion was opened by Dr Jacob Branower and Dr Harold C. Kelley.

Broome County

There was a special meeting of the Broome County Medical Society on June 18 at the staff meeting room, Binghamton City Hospital, to consider the report of the Economics Committee on a prepayment medical insurance plan and the report of the library committee.

Chautauqua County

The ninth annual interstate summer meeting will be held on July 24 at Chautauqua. Dr Nathan Van Etten, president of the A.M.A., will be the honored guest of the day. The medical program in the morning will be followed by afternoon public addresses by Dr A. H. Aaron, whose topic will be "Self-Medication and Its Dangers," and by Dr Van Etten, who will speak on "An American Health Program." A golf tournament and an evening of operatic entertainment complete the day's program.

All doctors, their families and guests are cordially invited to attend this meeting.

Dutchess County

The Dutchess County Medical Society concluded its activities of the year with its annual sports program held on June 19 at the Harlem Valley State Hospital, Wingdale. The program began at noon with golf matches, and a dinner was served in the hospital dining room to approximately one hundred physicians as guests of Dr John R. Ross, superintendent.

A brief business meeting of the society followed dinner, with Dr Gilbert S. Tabor, of Millerton, president, presiding. Dr William C. Clarke, formerly a member of the faculty of the College of Physicians and Surgeons, Columbia University, and now of Cornwall Bridge, Conn., was the guest speaker. His subject was "Cancers I Have Met." He described the cancer cases of his experience, discussing the various types.

Golf prizes were presented after the dinner by Dr John R. Ross. Later the group adjourned to the floodlit hospital baseball field to see the game between the Harlem Hospital and the Hudson River State Hospital teams.

same time studying medicine with the ship's surgeon.

Dr Paris was a student of Dr John Swinburne, of Albany, a surgeon of international fame, and was afterward associated with him in practice.

In 1902 Dr Paris returned to his native village and established a medical practice.

Westchester County

Under a new plan, Mount Vernon relief clients can pick their own physicians when in need of medical attention, Commissioner William A. Rose has announced. The plan, worked out with members of the Mount Vernon Medical Society, replaces one in which the department made the assignments.

Election of Dr Henry J. Margotta as president of the New Rochelle Medical Society to succeed Dr Francis Carr, Jr., who served during the last year, is announced.

Named with Dr Margotta are Dr John R. Jeppson, vice-president, and Dr William C. Meredith, secretary.

The annual election was held in conjunction with golf and a dinner at the Wykagyl Country Club.

Dr William Bowers and Dr Holland N. Stevenson won first and second prizes for low gross scores, while Dr August L. Beck, Dr John Riordan, and Dr Jeppson finished in that order for low net prizes.

Dr Phillip B. Becker won the hacker's prize, Dr Charles J. Sheffield compiled the high score, and Dr R. S. Davis the highest on any one hole.

Dr Margotta, the new medical society president, has been city physician for a number of years. During the last five he has been supervising physician in the Department of Public Welfare.

Yates County

The forty-first annual meeting of the Lake Keuka Medical and Surgical Association was held at Keuka Hotel, on June 20 and 21, with Dr Elhot T. Bush, of Elmira, as president. The vice-president was Dr John A. Hatch, of Penn Yan, secretary-treasurer, Dr V. H. F. Boeck, of Dundee, chairman, Committee on Arrangements, Dr E. C. Foster, Penn Yan, chairman, Exhibit Committee, Dr Allen W. Holmes, Penn Yan.

Physicians from the western, central, and southern tier counties in New York State and northern Pennsylvania are affiliated with the association.

The program included the following addresses Thursday: "A Message from The American Medical Association," by Dr Arthur W. Booth, F.A.C.S., chairman Board of Trustees, American Medical Association, Elmira; "The Medical Horizon," by Dr Terry M. Townsend, F.A.C.S., immediate ex-president, Medical Society of the State of New York, New York City; "The Management of Head Injuries," by Dr Theodore C. Erickson, The Montreal Neurological Institute, Royal Victoria Hospital, Montreal, Canada; "Transurethral Prostatectomy," by Dr Gershon J. Thompson, associate professor of urology, Mayo Foundation, Mayo Clinic, Rochester, Minnesota; Friday: "Shall We Have Fewer or More Psychiatrists?" by Dr Robert Bush McGraw, chief of clinic, Department of Psychiatry, Vanderbilt Clinic, New York City; "Practical Gynecological Endocrinology," by Dr Samuel H. Geist, professor of clinical gynecology, Columbia University, New York City; "The Diagnosis and Management of Precancerous Lesions of the Rectum and Colon," by Dr Neil V. Swinton, The Lahey Clinic, Boston.

Deaths of New York State Physicians

Name	Age	Medical School	Date of Death	Residence
Gilbert A. Ashmun	66	L I C Hosp	May 2	Brooklyn
Herman J. Ballen	44	N Y Hom	April 25	Bronx
William M. Butler	89	P & S N Y	June 22	Brooklyn
Eugene G. Kessler	72	P & S N Y	June 20	Manhattan
William N. Mac Artney	77	N Y Univ	June 15	Fort Covington
Baldwin Mann	57	Johns Hopkins	May 9	Collins
James W. Nash	67	Niagara	May 5	Buffalo
Russel C. Paris	80	N Y Regents	June 16	Hudson Falls
David Perla	39	P & S N Y	June 14	Manhattan
Martin T. Powers	60	P & S N Y	June 14	Utica
Llewellyn J. Sanders	67	N Y Hom	April 6	Rochester
Laurence B. Sisson	50	Syracuse	June 17	Anburn
Thomas B. Spence	72	P & S N Y	June 19	Brooklyn

SUMMER CAMP FOR DIABETIC CHILDREN

The New York Diabetes Association announces that its free summer camp for diabetic children is being operated this year with enlarged facilities. It is located at Wallkill, about ten miles west of Newburg. This is the fifth season for this enterprise, which each year has provided a two weeks' summer vacation for

children diabetics who are under the care of the various diabetes clinics in New York City. These unfortunate children are not accepted by any of the other vacation camps provided for normal children, for they require expert supervision, individual diets, injections of insulin, and daily examination of the urine.

was a pioneer in Central New York in his specialty, and was a past-president of the Utica Academy of Medicine. He was elected secretary of the State Roentgenology Society in 1939 and in May became its chairman. The society is the x-ray division of the State Medical Society

Onondaga County

Three methods by which public health services in Onondaga County might be much improved were presented before the Onondaga County Charter Commission in June by Dr O D Chapman, chairman of the public health committee of the Onondaga Medical Society, and Arthur W Towne, executive secretary of the Onondaga Health Association.

The first of the methods, which Dr Chapman described as "ideal but expensive," would require the formation of a county health district which would include the City of Syracuse. The cost of such a system would be \$244,265, according to estimates, and it is doubtful if the state would pay any share of it.

The second method provides for the formation of a county health department covering only the rural sections of the county. The cost of operating such a health unit is estimated at \$90,000, of which the state would pay half. Both Mr Towne and Dr Chapman indicated such a system might work out to excellent advantage.

The third method, the witnesses said, is to increase the staff of public health nurses from five, as at present, to about 15 and to provide an executive officer to direct their work. Such a system, the witnesses said, would provide adequate health service to the county.

Ontario County

"Mental Hygiene in Ontario County" was discussed in a paper by Dr Margaret T Ross on June 13 at the final meeting of the Canandagua Medical Society until fall. Dr John H Pratt, Manchester, entertained the group in his home. Dr Ross will be hostess at Brigham Hall on Sept 12, when Dr Pratt is to be reader.

Otsego County

Dr Ray D Champlin, of Oneonta, and Dr John C McClintock of Albany, spoke at the dinner meeting of the Otsego County Medical Society in the Oneonta Hotel on June 19. About 30 attended the semi-annual meeting.

Dr Champlin, lieutenant-colonel in the medical reserve, discussed "The Doctor in War Time."

Dr McClintock, associated with Dr G E Beilby in private practice, a staff member of the Albany Hospital, and on the teaching staff of Albany Medical School, gave a scientific address on "Preventing Complications of Thyroid Gland Disease." He is making special studies in that field.

Dr C C McCoy, vice-president of the group, and a member of the Bassett Hospital staff, was in charge.

Putnam County

At the annual meeting of the Putnam County Medical Society, June 5, at the Butterfield Hospital, Cold Spring, where the physicians of the county were entertained at dinner as guests of the hospital staff, the following officers were elected for 1940-1941: president, Dr Robert S Cleaver, Brewster, vice-president, Dr John T

Jenkin, Lake Mahopac, treasurer, Dr Alexander Vanderburgh, Brewster, secretary, Dr John T Jenkin, censors, Dr Garrett W Vink, Carmel, Dr James L New, Lake Mahopac, Dr Frank C Genovese, Patterson.

The society endorsed unanimously the proposed Eastern Putnam Hospital as planned.

The retiring president, Dr Henry W Miller, of Brewster, reported upon his attendance as delegate to the recent convention of the State Medical Society in New York City. Dr Miller was also chairman of the Division of Neurology of the State Society convention.

At the scientific session, following the business meeting, Dr Raymond J O'Connor, of Roosevelt Hospital, spoke on "Office Procedure in Diseases of the Lower Intestinal Tract."

St. Lawrence County

The first summer meeting of the St. Lawrence County Medical Society was held at the Massena Country Club on June 20. After lunch, golf, cards, and other entertainment were provided.

Steuben County

The Steuben County Medical Society held its semi-annual meeting at the hospital of the Veterans' Facility, Bath, on June 13.

Dr Francis M Ogg, chief of the hospital staff, presided, and Col. John A Hadley, manager of the facility, gave an address of welcome.

Participating in the scientific program were Dr Hayward Hopkins, Rochester, who read a paper on "The Valium Cup", Dr Sidney Eichenholtz of the facility staff a paper on "Low Back Pains", and Dr Abraham Falk also of the facility staff a paper on "Undulant Fever." The papers were followed by discussion.

The society will look into the possibility of a joint meeting with the Steuben County Bar Association, possibly at Bath in September, it was decided.

Otherwise, the September gathering of the society will be in Hornell. Officers will be elected at that time.

Washington County

Dr Russel C Paris, Sr, president of the Village of Hudson Falls for eight terms, a leading physician and surgeon, and one of the best known citizens in northern New York, died on June 16.

He entered the political life of the village soon after the turn of the century and for more than 25 years was a commanding figure. He was identified with the Citizens' party from the time of the organization, later named the Square Deal party and thereafter the Progressive party.

Dr Russel Clark, a noted surgeon, was his great-grandfather, and Dr Erskine G Clark, also a prominent Sandy Hill physician, was his great uncle.

Dr Paris was born in Sandy Hill on Aug 4, 1859. In 1873 he entered a competitive examination for appointment to the United States Naval Academy, and although only 14 years of age, easily defeated more than 20 other boys of Washington and Rensselaer Counties.

He graduated from the academy with honors in 1877, and completed the extended course two years later. He went to sea on the historic old wooden ships, "Hartford" and "Constitution," serving as a midshipman on the latter and at the

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Editorial

It is the common fate of the indolent to see their rights become a prey to the active. The condition upon which God hath given liberty to man is eternal vigilance, which condition if he break, servitude is at once the consequence of his crime and the punishment of his guilt.

—JOHN CURRAN

Accidental Drownings of Infants

A curious aspect of the national drowning record, which should not be lost to sight and upon which physicians might well place emphasis at this time, is the frequency with which 1- and 2-year-old children are involved. About 400 in this age group drown annually, a number far out of proportion compared with older groups and in relation to their number.

Most of the fatalities occur, surprisingly, in back yards, and not at the beaches and summer resorts. Suburban and rural back yards seem to be the worst hazards. Lily ponds, cisterns, cesspools, irrigation ditches, and small brooks, low, open barrels, or vats are the danger spots.¹ Despite constant warnings from safety organizations, some mothers take chances, leaving youngsters for a few moments unwatched. Especially is this true of children in or near a partially filled bath tub. One instance may be cited of a young mother who left her child in the bath to answer the telephone, with fatal results.

Physicians aware of these hazards to the 1- and 2-year olds should be able to reduce these mortality figures considerably by impressing upon the minds of young mothers the frequency of their occurrence. Because of their numerous contacts with the family during the early life of the newborn, physicians can and should be a far more effective agency of conservation in the matter of these hazards than any other group of individuals or organizations.

¹ Statistical Bulletin Met. Life Ins. Co. 21 No. 6 1 and 2 (June) 1940

The Woman's Auxiliary

To the Medical Society of the State of New York

THE Woman's Auxiliary to the Medical Society of the State of New York was most happy to have the privilege and honor to act as hostess to the members of the Woman's Auxiliary to the American Medical Association when they met for their Eighteenth Annual Session in New York City, June 10 to 14, with convention headquarters at Hotel Pennsylvania. Mrs. Rollo K. Packard, president, presided, with Mrs. Carlton F. Potter as convention chairman.

Business Sessions.—Meetings were held Monday through Thursday. Reports of all the committees and state presidents were received. The following officers were elected for 1940-1941: president, Mrs. V. E. Holcombe, Charleston, West Virginia, preident-elect, Mrs. R. E. Mosiman, Seattle, Washington, first vice-president, Mrs. C. Werner, Missouri, second vice-president, Mrs. D. Echler, New Jersey, third vice-president, Mrs. E. Allen, Georgia, fourth vice-president, Mrs. A. C. Jones, Idaho, recording secretary, Mrs. John L. Bauer, Brooklyn, treasurer, Mrs. D. Thomas, Pennsylvania, directors, Mrs. Carlton F. Potter, New York, Mrs. P. Wilson, and Mrs. E. J. Carey. The officers were installed by Mrs. James Blake, past-president, Minnesota.

The formal session opened with Invocation by Rev. Alfred Grant Walton, D. D., pastor of the Tompkins Avenue Congregational Church, Brooklyn.

The acting mayor of New York City, Mr. Morris Newbold, greeted and welcomed the auxiliary guests and members to New York City.

The address of welcome was given by Mrs. Luther H. Kice, New York State president.

Mrs. Rollo K. Packard's message inspired the members to do more serious thinking. She also stressed preparedness and the using of great care in the selection of officers.

Guest Speakers.—Dr. Rock Sleyster, past president of the American Medical Association, brought greetings, but said "inasmuch as the A. M. A. had taken unto themselves a wife, the W. A., he would dispense with the greetings and in a more familiar manner ask 'Where are the subscriptions to *Hygeia* that we did not get?'"

Dr. Morris Fishbein, editor to the American Medical Association *Journal* and *Hygeia*, said that the chief discussion of the medical profession was for preparedness. He asked the Woman's Auxiliary to be ready at the command of the Medical Committee on Preparedness. He advised us to carry on with public relations and education on health, so we may say we have a "Nation fit."

Dr. Chas. Gordon Heyd, with his jovial manner, welcomed the Woman's Auxiliary to the American Medical Association. He spoke of the Physician's Home, appreciating the amount given by the New York State Woman's Auxiliary.

Dr. Nathan B. Van Etten, president of the American Medical Association, reported that over 12,000 had registered at the A. M. A. convention. He told us that the medical profession is being mobilized. Regional committees have been appointed. He stressed the value of the legislative and the public relations committees mentioning the outstanding work that the New York State chairman is doing.

Exhibits.—The national exhibits in Parlor 2 were proof of the progress and interest in all of the organized states.

Entertainment.—On Sunday a delightful tea was given at Sherry's in honor of Mrs. Rollo K. Packard, national president.

Throughout the entire convention entertainment was planned for the visitors. Sightseeing trips, courtesy cards for shopping, courtesy flights, and a trip to Elizabeth Arden's Salon were among these plans.

The Woman's Auxiliary to the Medical Society of New York gave a dinner in honor of the Board of Directors of the Woman's Auxiliary to the A. M. A. This dinner was held at the Waldorf Astoria. An unusual program presented Claire Alcee, lyric soprano, with Willard Sektberg at the piano. At luncheon, Wednesday, Signor Salvadore Trivizo, gifted tenor, with Waldine Russel at the piano, entertained the guests. Thursday the annual dinner was held at the Pennsylvania Roof Garden. At this time Joyce Rickard played the Everett Orgatron, assisted by Ann Smiling at the piano and Otto Bender, violinist. After the annual dinner many attended the A. M. A. reception and ball at the Waldorf-Astoria Grand Ballroom.

The national membership is 23,524, with 66 new auxiliaries this year. Mrs. J. Emerson Noll, chairman of credentials and registration reported that the total registration was 1,321.

The convention chairman, Mrs. Carlton F. Potter, and her committees, should have special recognition for a most efficient manner in arranging and carrying out details for a most successful and enjoyable convention.

Summer is here and with it the yearning to be in the wide open spaces. Meetings and indoor activities are no longer of interest. The next two months find us storing up ideas, energy, and enthusiasm for the months to come. Many of the county auxiliaries have adjourned and their final meetings have been picnics, luncheons, and dinner dances. Several held their annual election of officers. In the future, fellow members, look for suggestions and announcements concerning the welfare and future activities of our organization.

The state organization wishes a pleasant summer for all of its members.

The history of liberty is a history of limitations of governmental power, not the increase of it —
Woodrow Wilson

'The man who graduates today and stops learning tomorrow is uneducated the day after' —
Newton D. Baker

3 Those from 18 to 21, and from 45 to 65, would be limited to home defense

All, however, would be liable for peacetime compulsory training for a basic period of eight months

There will doubtless be numerous modifications of these provisions exemptions and deferments regulated by law and administered by local boards so as to avoid disruption of industry, the professions, agriculture, and other essential occupations The point is that we shall doubtless have universal military discipline as a permanent feature of the American way of life, and that, shortly

Here are principles and practices that American medicine can and should heartily approve For their adoption assures in time adequate defense preparations to enable this Nation to maintain its historic independence Self-discipline for centuries has held the medical profession together, a discipline of the mind and of the body This has been the secret of its preparedness, the armor of its independence Shall not medicine advocate for the Nation that which it has so long tried and tested in its own behalf? In this democracy, military training of a compulsory character seems to be viewed with alarm by many as a kind of tyranny So it is So is a surgical operation But, when thoroughly justified by the circumstances, whether exercised for the preservation of one life only, or the many, who shall say it is not worth the risk? Certainly no physician Better a stipulated domestic discipline for the preservation of the Union than the certainty of a total discipline imposed from without "We must all hang together, or, assuredly we shall all hang separately," said Franklin The advice is still good

Five-Day Treatment of Syphilis

The development of the five-day treatment for syphilis and its clinical application has not as yet reached the stage where the method can be adopted for general use outside of well-organized hospitals The originators themselves, Drs Hyman, Chargin, and Liefer, are still experimenting with the purpose of further perfecting its usefulness This point is stressed because of the false impression many have got from the nation's press Some doctors have been accused of incompetency by their patients, others have had their syphilis patients seek other care because such patients would no longer submit to the usual course-method of treatment which combines with the arsenicals other antisyphilitic drugs

The American Social Hygiene Association, which has supervised the clinical work, has, through the chairman of its committee, Dr George Baehr, summarized the present status of the five-day treatment as follows¹ "Modification and improvements in the technic will undoubtedly be made by others Although the use of bismuth and other effective therapeutic agents might have resulted in a more nearly perfect result, they were omitted in order that the effectiveness of the five-day treatment with the arsenical alone might be determined Without such adjuvants, 15 per cent of the cases may require a second five-day treatment after an interval of several months

"The technic cannot be recommended for general adoption until a larger volume

"Mediocre"?

The Editor is in receipt of the following letter

Dear Dr Irving

Your recent form circular for a Student Subscription Fund is, no doubt, a worthy cause—but if this consists in providing them with the *State Society Journal* I feel that at least 50 per cent of the contributors would be glad to part with their subscriptions and let the State Society have the \$5 or whatever they exact from the doctor for this mediocre journal. If you carried out a heart-to-heart canvass of the doctors, you might learn that many of these journals find their way to the basket just like the advertising literature which reaches us all the time. Let the *State Journal* be a voluntary rather than a forced matter.

Yours very truly,
A Silenced Physician

We are interested principally in the phrase "this mediocre journal." The Editor and the Publication Committee receive, from time to time, comments on the *JOURNAL* from interested readers. These are always considered in detail if they contain specific proposals for the betterment of the publication. It may be pointed out that the material contained in the scientific section is usually that which is submitted without solicitation by the contributors. If it is mediocre, as our silenced correspondent alleges, it is the responsibility of the contributors who will please note and evaluate the criticism. If the content of the editorials is mediocre, that is the responsibility of the Editor and the editorial writers. How can it be improved, specifically? The Editor would appreciate any information on this question which will guide the Publication Committee and the staff.

Concerning the "heart-to-heart canvass" of the doctors, let it be remembered that the House of Delegates exists for the purpose of carrying out the wishes of the membership of the Society. It may be that our correspondent attends the meetings of his county society. If so, he can introduce at any time a resolution to change the status of the *JOURNAL*, by presenting through his county society delegates a resolution on the floor of the House at its next meeting. There is a proper way to do everything.

Universal Discipline

Compulsory peacetime military training in one form or another is quite likely to be voted at this session of Congress. The Burke bill now in the Senate proposes

- 1 Registration of all men between the ages of 18 and 65
- 2 Those men between the ages of 21 and 45 would be liable for service at home or abroad

TWO MILK-BORNE EPIDEMICS TRACEABLE TO A SINGLE DAIRY

Bacillary Dysentery Outbreak

HOLLIS S. INGRAHAM, M.D., Kingston, New York

(District State Health Officer)

IN AUGUST and September, 1935, there occurred an outbreak of bacillary dysentery in Red Creek, a village of somewhat less than 600 inhabitants in Wayne County, New York.

In the course of the epidemic, 134 persons are known to have been attacked. Of these, 66 were males and 68 were females. The ages of patients ranged from infancy to over 90 years of age, 42 were 14 years of age or less, and 92 were 15 years of age or older. Attack rates for a certain group in the village are shown in Table 1. It will be observed that attack rates were essentially the same by sex but that children appeared more susceptible than adults.

Clinically, the symptoms were those of mild bacillary dysentery. Onset was sudden in most instances, with nausea, vomiting, abdominal cramps, and diarrhea followed shortly by constitutional symptoms. The more severely ill exhibited bloody stools. Temperatures of 102 to 104 F were common in children. The average length of stay in bed was slightly over two days, many patients remaining ambulant. Five patients were hospitalized and several patients were confined to bed for over a month. There were no deaths.

The incubation periods as determined for 6 persons believed to have had single exposures varied from twenty-four to sixty hours.

Fecal specimens were obtained from 33 patients. These were taken for the most part after clinical recovery. Specimens from 12 persons were positive for dysentery bacilli of the Flexner group. Fecal specimens were secured from 18 family contacts of patients, of these, two were positive for the same organism.

The first instance of illness was on

August 24, the modal day was reached on September 9, and only 2 cases occurred after September 18. Onsets by weeks are shown in Table 2.

Cases of illness were confined to Red Creek or to persons working or attending school in Red Creek, and there was no concentration of illness in any one section of the village. Since most patients gave no history of contact with a previous case and since the epidemic was so circumscribed in space and time, it seemed obvious that it had been spread by a common vehicle of infection. No public gathering had been attended by most of the patients attacked. The only vectors to which most patients had been exposed were the village water supply and raw milk distributed by Dealer A, these were delivered to about 95 per cent and 75 per cent of the villagers, respectively.

Among 590 persons interviewed in a house-to-house canvass, histories of use of village water and milk from Dealer A were obtained according to history of illness as shown in Table 3. It will be observed that there was a highly significant difference in attack rates between users and nonusers of Dealer A's raw milk but that attack rates were practically identical among users and nonusers of village water. It can further be seen that among the 560 persons exposed to village water attack rates were significantly higher among milk users.

There were many persons in the village school and canning factory who did not reside in the village. All of these were exposed to the municipal water supply while at work or school, but few used Dealer A's milk. There were 66 workers in the canning factory, 49 of whom lived out of the village. Only 18 workers had used the suspected milk, 6 of these de-

of experience has been accumulated under careful hospital supervision and the necessity for the supplementary therapeutic agents has been determined "

It would be well for physicians to read Clark's article in the *Journal of Social*

*Hygiene*¹ since it is an excellent answer to the misconceptions existing in the public mind on the subject of the five day treatment of syphilis

¹ Clarke W J *Social Hyg* 26 (May) 1940

Mottled Enamel

An epidemiologic problem but little known to the average physician is the prevention of the dental abnormality called mottled enamel¹. This is a non-communicable disease, limited to definite geographic regions, and, like the incidence of Graves' disease in the goiter belt, is also dependent on a halogen—in this instance, fluorine. It occurs during the period of childhood when the enamel is undergoing calcification and is the result of the ingestion of fluorine compounds found mostly in drinking water but also in some foods. Both dentine and enamel are imperfectly formed, and the latter is opaque, chalky white, pitted, and discolored in spots to a yellowish brown. It affects chiefly the permanent teeth and, strangely enough, is confined to the outer surfaces of the upper front teeth². Once established, mottled enamel constitutes a permanent deformity, and therapy can

only be directed toward cosmetic improvement. The cost of this to the patient runs high, and it is for this reason that prevention assumes such an important role in the control of chronic endemic dental fluorosis.

According to Hawkins and Gordon, there is no single ideal program of control. By far the best is to assume that the fluorides in the water are less than one part per million. Where the index of mottled enamel is high, a new source for water supply is indicated where feasible, preferably using surface water. The lime method proposed by Scott³ and his associates is the next best but cannot be used in all instances. Each community presents its own problem and each must be dealt with individually. The eventual control of this form of chronic fluorosis will save millions of dollars now expended in what can be made unnecessary dental restorations in the later life of children so affected.

¹ Hawkins J W and Gordon J E *Am J M Sc* 199 431 (Mar) 1940

² McKay F S *Operative Dentistry* (Black A D) 7th ed 1936 vol 1 218

³ Scott R A *et al* *J Am Water Works Assn* 29 0 (1937)

"Information—Please"

QUESTIONNAIRES from the A M A relating to the classification of physicians for defense have recently been received in the State of New York.

It is highly important that these be filled out and returned IMMEDIATELY to the A M A, for the tabulation of information will take time.

Another questionnaire is in preparation by the Council Committee on Military Preparation for use by the county societies and it will contain still further information needed by the various county societies of the state. When they are received they should be completed and returned at once.

TABLE 4—RED CREEK DYSENTERY AUGUST AND SEPTEMBER 1935

Attack Rates According to Age and Average Quantity of Milk Consumed per Day Among Regular Customers of Dealer A

A, Daily Milk Consumption	0-14		15 and over		Attack Rate Percentage	
	Persons exposed	Cases	Persons exposed	Cases	0-14	15 and over
None	7	2	31	2	28.6	6.7
1-15 oz	21	8	233	59	38.1	25.3
16 oz and over	48	27	49	20	56.3	40.8

Scarlet Fever Outbreak

In the latter part of February, 1936, attention was again called to an outbreak of illness in Red Creek, the disease being scarlet fever on this occasion. During the course of this epidemic, 73 cases occurred. Thirty-one patients were males and 42 females, 22 were 14 years of age or less, and 51 were 15 years of age or older.

Clinically, the disease was typical scarlet fever of moderate severity, characterized by sore throat, fever, and cervical adenopathy. A characteristic rash was observed in 50 per cent of the cases. Rash was seen in over two-thirds of the patients 14 years of age or less. Complications consisted of arthritis, pneumonia, otitis media, mastoiditis, meningitis, erysipelas, and quinsy. Throat cultures secured from patients while acutely ill were positive for hemolytic streptococci. There were 3 deaths.

Dates of onsets of cases by weeks is shown in Table 5. This outbreak was relatively gradual in its development as compared with most milk-borne streptococcal outbreaks. Nevertheless, it rose and fell much more rapidly than is usual in contact epidemics of scarlet fever.

The outbreak was limited geographically to the village, there being no undue incidence among persons in the surrounding towns or villages. The age distribution was characteristic of milk-borne outbreaks of streptococcal infections, 70 per cent of the cases being in individuals 15 years of age or older. The relatively sudden onset of the epidemic and inability to elicit a history of contact with a previous case from any considerable number of patients strengthened this suspicion. Epidemiologic analysis amply confirmed this preliminary conclusion. Raw milk from Dealer A was the only vector to which most patients had been exposed.

TABLE 5—RED CREEK SCARLET FEVER FEBRUARY AND MARCH 1936

Onsets of Illness by Weeks

Number of patients whose onsets fell during period	Week Ending Feb 1	Week Ending Feb 18	Week Ending Feb 25	Week Ending Mar 3	Week Ending Mar 10
	2	14	46	10	1

TABLE 6—RED CREEK SCARLET FEVER FEBRUARY AND MARCH 1936

Attack Rates Among Users and Nonusers of Dealer A's Milk

	Persons*	Cases	Attack Rate Percentage
Used A's milk	380	72	18.9
Did not use A's milk	152	1	0.66

* Fewer persons interviewed than previously chiefly because canning factory closed.

As can be seen from Table 6, the attack rate among users of Dealer A's milk was twenty-nine times as high as among non-users of this milk.

Among the 97 village pupils in the Red Creek school there were 21 patients, all of whom used Dealer A's milk. Among the 115 out-of-village pupils, none of whom used Dealer A's milk, there were no cases. These figures would indicate that the outbreak was indeed spread by raw milk supplied by Dealer A.

Hemolytic streptococci of Group A of the Lancefield classification were isolated from a sample of Dealer A's bottled milk secured on February 27. Examination of his herd disclosed a cow suffering from acute mastitis. From the affected quarter, a specimen of milk was secured which contained hemolytic streptococci of Group A of Lancefield's classification.

No history of illness was admitted by any members of the dairy farm household nor did any give evidence of recent streptococcal infection. Hence, no clue as to the human source of the cow's infection could be procured.

Investigation of the outbreak was begun on February 27, from which time pas-

TABLE 1—RED CREEK DYSENTERY AUGUST AND SEPTEMBER, 1935
Attack Rates by Age and Sex for Regular Customers of Dealer A

Age	No. of Persons Interviewed		No. of Cases		Attack Rate Percentage		Total
	Male	Female	Male	Female	Male	Female	
0-14	38	38	17	20	44.7	52.6	48.7
15 and over	140	175	37	44	26.4	25.1	25.7
Total	178	213	54	64	30.3	30.0	30.2

TABLE 2—RED CREEK DYSENTERY AUGUST AND SEPTEMBER 1935
Onsets of Illness by Weeks

Number of patients whose onsets fell during period	Week Ending Aug. 30	Week Ending Sept. 6	Week Ending Sept. 13	Week Ending Sept. 20	Week Ending Sept. 27	Week Unknown
	16	25	80	12	1	1

veloped dysentery. Forty-eight persons in the factory had drunk none of the milk in question and only 3 became ill, and 2 of these had been in contact with a previous case.

A brief survey of diarrheal illness was made in the school, but detailed histories were not taken, hence, cases occurring among nonresident school children are not included in the tables.

In the school there were 97 pupils resident in the village and 115 pupils not resident in the village. All these children drank village water at school, but no nonresident pupils used Dealer A's milk. During the first week of school, September 3 to 10, 16 village pupils developed diarrhea, 15 of whom had used Dealer A's milk. Three nonvillage pupils were affected during this same time. After September 10, when opportunity for contact had occurred, 22 village pupils and 12 nonvillage pupils were affected.

As evinced by Table 4, attack rates varied directly as to milk consumption.

These figures offer satisfactory statistical evidence that raw milk from Dealer A was associated with the carriage of bacillary dysentery.

The implicated dairy farm supplied daily slightly over 150 quarts of raw milk and cream to Red Creek village. Twelve persons lived on this farm, four of whom were ill during the course of the epidemic. From 2 of these patients, *Bacillus dysenteriae* Flexner was isolated after recovery. In addition, the same organism was isolated from 2 members of the family who had not been ill. One of these was the

dairyman himself. Positive fecal specimens were secured from him on September 20 and on September 26. He subsequently yielded negative specimens. It is of interest that urinary specimens positive for *B. dysenteriae* were secured from one of the patients on the farm as late as three months after recovery. No history of illness prior to the epidemic could be obtained from any member of the dairy farm household.

Pasteurization of all milk was required at the beginning of the investigation, but by that time the epidemic had spontaneously terminated. No further cases appeared after Dealer A was again permitted to sell raw milk. The original source of infection was not certainly discovered nor were the factors that brought about the cessation of the epidemic. It seems likely that the dairyman had acquired a temporary carrier state and had directly contaminated the milk. Possibly the termination of the epidemic was the result of exhaustion of susceptibles, since nearly one-third of the customers of Dealer A were attacked (Table 1).

TABLE 3—RED CREEK DYSENTERY AUGUST AND SEPTEMBER 1935
Attack Rates According to Use* of Milk from Dealer A and of Village Water

Vehicle	Persons	Cases	Attack Rate Percentage
Used Dealer A's milk	400	123	30.8
Did not use Dealer A's milk	190	11	5.8
Used village water	560	127	22.7
Did not use village water	30	7	23.3
Used village water and A's milk	380	110	30.1
Used village water no A's milk	175	11	6.2

* Includes any use immediately before illness or if not ill during outbreak.

THE IMPORTANCE OF A NEW X-RAY EFFECT FOR OUR DAILY DIAGNOSTIC AND THERAPEUTIC X-RAY WORK

SIEGFRIED W. WESTING, M.D., Brooklyn, New York

(From the Department of Radiology, Department of Hospitals, New York City)

THE pioneer x-ray workers did not know, did not even suspect, that the x-rays, apart from their photographic properties, had any appreciable effect on biologic objects. One by one, these various effects made their appearance, burns, epilation, blood changes, sterility, and cure of diseases were observed and are now either controlled by protective measures or produced at will for the benefit of the sick. Further unexpected consequences occurred in the form of late sequelae, first, in a few patients skin ulcers developed at the site of intense x-ray treatment many years after the cessation of the treatment. Now, after forty-four years of experience with x-rays, we assume that our knowledge as to their effects and by-effects is rather definitive and that additional surprises can hardly be in store for us.

However, in taking such an attitude we are committing a serious oversight. We disregard the fact that in testicles and ovaries is located the hereditary material, which is passed on from the individual to his or her children and from these children to all the succeeding generations and thus is endowed with an unlimitedly long existence. We know the immediate effect of large amounts of x-rays on the reproductive organs—namely, temporary or permanent sterility. But forty-four years did not give us the chance to determine whether substerilizing and temporarily sterilizing doses may not have any late effect on the hereditary material.

The situation is rather perplexing. In our diagnostic and therapeutic x-ray work, we daily expose reproductive organs to more or less x-rays. It is really not idle curiosity, it is the feeling of a far-reaching responsibility that prompts us to search for an answer—be it even a preliminary one—to the question: What is a safe dose for testicles and ovaries?

In our dilemma we have no alternative but to turn to plant and animal experiments. On organisms much shorter lived than man, observations can be carried through numerous generations in a comparatively short time and—in contradistinction to human beings—mating of these subjects is controllable by the experimenter. I just said we have to turn for information to people who do laboratory experiments. To be frank, we do not have to turn to them, they have turned to us, and they are warning us.

Hermann J. Muller,¹ then professor of zoology at the University of Texas, speaks to us in Otto Glasser's book, *The Science of Radiology*. His experiments were done on the fruit fly and were confirmed by all of the many subsequent workers on fruit flies as well as on numerous other species of plants and animals. Muller's treatise is of fundamental importance, it is written in a most fascinating manner and should be read by all radiologists.

The subject was once more presented to us by M. Demerec,² of the Carnegie Institution of Washington, Cold Spring Harbor, New York, in the August, 1936, issue of *Radiology*. Unfortunately, as far as one can gather from the American literature, these warnings, just as Muller's, have not been given the attention they deserve. Some physicians are as yet unaware of the fact that a new science has come into existence—namely, radiation genetics. This science is using a great many technical terms and graphic symbols difficult to digest for outsiders and has produced a literature too voluminous^{3,4,5,6} to be readily absorbed by the average medical mind. But its startling conclusions can be understood easily.

Let me summarize in eight paragraphs what the authoritative geneticists the world over are asserting.

teurization of all Dealer A's milk and cream was required. The outbreak quickly terminated following the institution of this measure.

Subsequent to this epidemic, the village of Red Creek passed an ordinance requiring permanently the pasteurization of all milk and cream sold in the village.

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To the Editor

Faced with the horrors of immediate invasion, England is setting up great numbers of sub-hospital bases throughout the entire country to care for the large-scale casualties which now seem inevitable.

There will be an imperative need for surgical instruments and hospital supplies to handle this critical situation. As a voluntary organization of Americans, we are, therefore, appealing to the medical profession of America for assistance. Instruments and equipment, even somewhat out of date, so long as they are in good condition, would save untold lives at this dark moment for Great Britain.

We have on hand a complete list* of the things for which we have had urgent appeals, and if your members feel that they can help us we shall be very glad to send it to them.

BUNDLES FOR BRITAIN is licensed by the State Department, 235 to ship through the Allied Relief Fund directly to the British Red Cross, which distributes the articles through England.

It is only too obvious that the question of time is of paramount importance at this dark hour for civilization. We hope to hear soon in regard to this work of mercy.

Very sincerely yours,

MRS WALES LATHAM,
President, BUNDLES FOR BRITAIN

[* See page 1194

For further information write to the Duchess of Leinster at the above address—Editor]

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1 X-rays are a sure, in fact the surest, means to produce changes in the offspring of the irradiated animal. These changes may become manifest in the first or in one of the later generations, and they are transmissible through an endless succession of generations. Most of them will not manifest themselves unless both father and mother have been irradiated or come from irradiated stock.

2 The changes are of structural and of functional character. The great majority of them are disadvantageous.

3 The effect of the rays on the hereditary material increases in direct proportion to the amount of radiation. The effect is irreversible and cumulative over an indefinitely long period of the life of the hereditary material. That means that the effect is cumulative during the life of the individual plus the life of its offspring through the generations. There is no recovery from this radiation effect, and the results are independent of the spacing of the dose. Subthreshold and ineffective doses do not exist, even minimal doses have a lasting effect.

4 The developmental state of the germ cells at the time of irradiation is of little or no influence on the ultimate effect.

5 Neutrons, gamma-rays of radium, and Grenz-rays behave just as x-rays. The effect is independent of the wave length.

6 The effect is a direct one. Irradiation of other parts of the body does not produce these changes of the hereditary material.

7 The research is now being extended to mammals. The mammal tests—necessarily more expensive and more time-consuming than tests on fruit flies—are not yet numerous enough for statistical evaluation, but they do give evidence of hereditary changes produced by irradiation of guinea pigs (Martius and Kroening,⁷ Goettingen University). In the case of mice (Snell,^{8,9,10} Bar Harbor, Maine), the tests do prove the production in large numbers of regularly inherited "semisterility," which caused the death in utero of half of the young conceived,

half of the remainder carrying the genetic disturbance which continued the disorder to the next generation and so on down. The most demonstrative mammal experiments were conducted by Paula Hertwig.¹¹ Male mice were subjected to temporary x-ray sterilization, and after certain breeding maneuvers (father-daughter mating) severe deformities and grave diseases became manifest in a large percentage of the great-grandchildren and their offspring. The illustrated report of these well-controlled experiments cannot fail to make a deep impression on every reader.

8 Although the applicability of these observations to the human race has not been demonstrated as yet, the geneticists maintain that human beings must be regarded just as amenable to this radiation effect as animals and plants until proved otherwise. While the doses in human beings may be larger or smaller than in the laboratory animals, they probably are pretty much the same.

The opinions of the geneticists concerning human beings may be right or wrong. Should they be right, they would be of tremendous importance to everyone who switches on an x-ray tube and would place a serious responsibility on our shoulders. Since the geneticists are unanimous in this respect, let us suppose for a moment that their fears are justified and that their warnings have to be heeded and let us determine what their teachings mean to medical practice.

At the outset I wish to emphasize that we are not concerned here with persons past the procreative age but solely with such exposures that take in the generative organs of children and adults young enough to be eligible for future fatherhood or motherhood. In the following discourse these two groups will be referred to as young persons. Under the assumption that the geneticists are right, every exposure—fluoroscopic, roentgenographic, and radiotherapeutic—that either directly or by scattered radiation hits the sex glands of a young person has an indelible effect, increasing with the amount of rays applied to this individual and his or

her descendants. Many of the injurious results may become manifest under certain conditions only. It would be necessary that both the paternal and the maternal hereditary material had been injured and injured in an identical way. If a sperm damaged as to the formation of fingers is united with an ovum damaged as to blood, no ill effect may show, but if both happen to carry identical defects, undesirable changes are bound to appear in a large percentage of the offspring of such a marriage. The probability of such a marriage will be greater the more the sex glands of the population had been exposed to a considerable amount of rays. The probability that changes will become manifest increases as the amount of rays hitting the sex glands of the population as a whole increases.

Always supposing that the geneticists are right, we are facing the task of revising our conceptions of safety. Up to now we are calling safe that which does not affect the health or fertility of the irradiated individual and—in case of pregnancy—of the child to be born. But according to the geneticists a procedure may be harmless for the exposed and his or her immediate progeny and not at all harmless for later generations. Furthermore, a supposedly harmless procedure may develop into a hazardous one if repeated during the life of the individual or his or her children, due to accumulation. And still further, the irradiation, thought to be applicable with impunity, may be extended to so many people that intermarriage of irradiated individuals will become a frequent occurrence with the undesirable consequences of such a union for the offspring. In connection with safety, it is customary to think in terms of years and individuals, but, if the geneticists are right, we will have to replace "years" by "generations" and "individuals" by "population."

Some of the physicians who learn about the problem propose not to heed the warnings of the geneticists until an actual case of such radiation injury in a human being is demonstrated to them. Right now no such case is on record. But we must not

overlook that according to the geneticists these changes, as a rule, will not appear in the first or second but in a later generation. So far, our observations on man do not cover a sufficiently large number of generations and—necessarily—will not do so for quite a while to come. If we plan to postpone action until the first damaged offspring makes its appearance, it may be too late to prevent additional disaster. For, should the geneticists be right, during the intervening time our activities would increase the latent damage, and this latent damage, which is said to be irreparable, would become manifest sooner or later in spite of the precautions taken after the first alarming report. This consideration renders it imperative, in my opinion, to take some action now, even when this action is based on suspicion only.

We are being informed by the geneticists of a hitherto unknown biologic effect of the x-rays on laboratory animals. Our present situation is very analogous to the one following Albers-Schoenberg's discovery of the sterilizing effect of the x-rays on rabbits and guinea pigs. It took about a year to establish the applicability of this effect to human beings. In the meantime some physicians anticipated the existence of a sterilizing effect on man and pleaded for increased protection, while others called such admonitions exaggerated.¹² Today everybody knows that the increased protection is actually indicated.

What, then, is to be done in our present situation? We ought to inaugurate a system of partial prohibition. We ought to restrict our diagnostic and therapeutic radiation activities in the lower abdominal sphere of young persons to definitely indicated procedures and to employ the rays only after other means are exhausted and when considerable benefit is to be expected from their use. We ought to weigh very carefully whether or not the gravity of the disease and the diagnostic or therapeutic value of each exposure warrants the price of the potential risk involved. We ought to use discrimination. Practical examples will clarify my point.

When a girl fractures her pelvis, an x-ray examination is so important to her entire future that we will not hesitate to apply about $1\frac{1}{2}$ r to her ovaries (which is the amount estimated to reach the ovaries when the pelvis is roentgenographed¹³), even if it does involve a potential danger to her great-grandchildren. Each time a re-examination is contemplated, we should question ourselves again whether the benefit to be expected from the examination outweighs the potential damage to future generations. Another example is pregnancy roentgenography. It is all well and good when important information is to be gained, but the suggestion of one prominent obstetrician to make pregnancy roentgenography a routine procedure is to be condemned, in my opinion, as long as doubt exists as to late changes. High-speed intensifying screens should be employed in pelvic roentgenography of young persons in order to reduce the dose.

The same restrictions should apply to any exposure of the lower abdomen of young people, male or female, pregnant or not pregnant, including urologic and intestinal studies.

For the sake of clarity I wish to dwell for a moment on the subject of pregnancy. Because of the high sensitivity of the fetus, especially during the first four months, and its tendency to develop into a monster after *therapeutic* doses of pelvis irradiation, all agree that such radiotherapy should be withheld during pregnancy, except when abortion is desired. Diagnostic x-ray procedures of ordinary extent are conventionally considered harmless, because no outward manifestations of damage have ever been observed in mother and child. However, the teachings of the radiation geneticists are creating doubt in our minds as to the innocuousness of diagnostic as well as therapeutic radiation performed in the region of the gonads of young people, male as well as female, not pregnant as well as pregnant. Experimental research suggests the possibility of undesirable consequences. These consequences may remain latent at first and, under certain

circumstances, become manifest in subsequent generations.

A few examples from the field of therapy are. In a case of subchronic osteomyelitis of the pubic bones in a 10-year-old girl, the question of x-ray treatment was discussed. When the possible danger to the ovary was pointed out to the surgeon, he inquired whether one could not keep the amount of rays that penetrate down to the ovaries below the sterilizing dose. One certainly can. Fifty r probably would reach the ovaries at the most. But in the light of the geneticists' warnings, even doses far below the sterilizing dose have to be applied with hesitation. X-ray treatment in such a case certainly is the last method rather than the first to which one would resort.

Dermatologists often have more than one remedy at their disposal. If they knew that, according to the geneticists, even small doses to the reproductive organs may not be harmless, they often could give preference to agents other than x-rays in the lower abdominal sphere.

For intrapelvic infections, pulmonary tuberculosis, and some other conditions, temporary x-ray sterilization has been recommended. The dose necessary is about 150 r to the ovary. The *Journal of the American Medical Association*¹⁴ in answer to an inquiry stated: "There has been controversy on this subject, but the consensus is that radiation therapy applied before fertilization of an ovum does no harm." I challenge the word "consensus." While the opinion expressed in the *Journal* is probably that of many of our leading radiologists, it is not shared by all of them.^{15 16 17, 18} The English also dissent. I wish to quote from Colwell and Russ,¹⁹ who wrote a book welcomed by the British X-Ray and Radium Protection Committee: "Most of the recent authorities are, we think, in agreement that radiation of the ovaries in those who expect to have children is best avoided" (page 89). "The possible influence of ovarian radiation on succeeding generations begotten of the offspring of an irradiated mother must not be overlooked" (page 103). "A careful survey of the

literature leads us to the conclusion that the great bulk of responsible opinion is decidedly against the temporary sterilization of women who may afterwards bear children" (page 104). In Germany temporary x-ray sterilization is no longer practiced on account of possible damage to the offspring. As early as 1931, I²⁰ reported about this attitude abroad in the *Journal of the American Medical Association*.

Another debatable therapeutic indication is the treatment of sterility by small x-ray doses to the ovary, amounting to about 100 r. Concerning this indication, Colwell and Russ¹⁹ make the following statement: "No defective offspring have so far been recorded so far as we have examined the literature, nevertheless it is obviously a procedure to be employed—if it is employed—with the greatest caution and when all other means of influencing the ovarian functions as by regulation of the general health or such other means as expert gynecological examination may suggest have failed" (page 107). It is up to the physician to decide whether the immediate benefit to the family warrants the possible hazard to future generations.

Therapeutic abortion with the help of x-rays requires about 360 r to the uterus and necessarily a similar amount to the ovaries. Here, too, possible damage to the germ plasm should be taken into consideration, and caution is all the more advisable as the ovarian dose is comparatively large. I fully agree with Colwell and Russ¹⁹ that this procedure should be limited to patients who are not subsequently to become mothers again (page 110).

If there is room for debate about the worth of the procedures mentioned so far, there are two classes of exposures that are unquestionably unnecessary and should be avoided at all times. First, it is entirely unnecessary, and in my opinion objectionable, to leave a young patient's genitals unprotected on the occasion of examination and treatment of other regions of his or her body. It is, *first*, so simple to cover the testicles with lead during kidney roentgenography and to

spare them the useless exposure of approximately 25 r per film (oral communication from Dr. Ramsay Spillman, New York City, with whose setup this figure was obtained by the physicist Carl B. Braestrup). And it is still simpler to protect the genitals in every single instance from stray radiation during examinations and treatments of the head, neck, chest, and extremities. It would be very advisable indeed to handle our young patients at all times as though we had to protect an unexposed film carried next to their genitals.

Secondly, it is entirely unnecessary, and in my opinion objectionable, to expose to direct or stray radiation the genitals of the operators, that means physicians, dentists, veterinarians, technicians, service men, physicists, engineers, and their helpers and onlookers, as long as they are young in the sense of this paper.

In case the operators' exposures remain within the officially accepted tolerance dose of 0.2 r per day, their health and fertility will not become affected, as experience has taught us. Still, their posterity may be harmed if the geneticists are right. In ten years the tolerance dose will sum up to 480 r. About 30 per cent, equal to 144 r, would reach the ovaries in female therapy technicians, a dose decidedly too high from the standpoint of the geneticists. In male persons the dose to the testicles would be still higher. Fortunately, as recent measurements by Braestrup²¹ have shown, in the New York City municipal therapy departments, the dose actually received is much lower, in some cases as low as $\frac{1}{150}$ of the so-called tolerance dose. Even a firm believer in the warnings of the geneticists will have no objection to such working conditions. But the same measurements have shown that in many private therapy institutions the dose dealt out to the operators is far in excess of the so-called tolerance dose.

In the diagnostic x-ray plants, it is not so much the lack of protective devices as the negligence of the worker which can be noted frequently and which causes exposures that in my opinion must be condemned unconditionally. The number

of violations is large. Doors of control-booths are left open, portable x-ray examinations are done without aprons, apron-equipped persons thoughtlessly turn their unprotected backs toward the energized tube, service men think it beyond their dignity to protect themselves.

I am afraid few dentists ever devote any thought to this question of personal hygiene. The roentgenoscopists of a prominent clinic are discarding lead rubber gloves and lead rubber aprons and rely on small diaphragm openings and speed of procedure for the protection of their hands and bodies. If they would measure the dose they are receiving, they might find that two hours' exposure during fluoroscopy may deliver 1 r to the skin, outside of the fluorescent screen.

Tests done for me by Irving H. Blatz have shown that in roentgen-diagnostic work practically absolute protection is afforded the gonads by the official protective equipment. Since it can be accomplished without additional equipment, just by proper use of the present-day equipment, I strongly suggest that the tolerance dose for the lower abdomen of young operators be reduced considerably below the accepted 0.2 r per day. Probably $1/100$ of this dose will be found feasible by the physicists and will be approved by the geneticists. (In a recent article, L. S. Taylor²² quotes unidentified geneticists as arguing for a reduction of the tolerance dose to $1/10$ of its present value. But it is known to me that many authoritative geneticists—although not ready to commit themselves to any definite figure—are inclined to recommend a more drastic reduction.) At any rate, I am making a most emphatic plea for a thoroughly conscientious and scrupulous application of the protective devices at all times by all who employ the x-rays. (Suggestions for the behavior of radium technicians will have to be worked out by men more experienced in this particular field than I.)

Finally, I am going to formulate the answer to the above-raised question

What is a safe dose for testicles and ovaries? According to conventional teaching²³ 150 r is a safe dose for the ovaries and a somewhat similar figure for the testicles. But actually the safe dose is not yet known and, if the geneticists are right, the figure may be zero or very close to zero. This means that for the time being, as long as the answer is still uncertain, in x-ray diagnosis and radiation therapy we should see to it that the dose applied in the form of direct or scattered radiation to the reproductive organs of the total group of children and young adults be kept just as small as feasible.

Should the future prove that our suspicion was unwarranted and the advocated precautions were unnecessary, these precautions will be abandoned and nobody will have suffered any essential loss. But meanwhile we ought to do everything within reason to diminish the possibility of creating undesirable traits in our progeny.

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THE TECHNIC OF THE MODERN EXTERNAL FRONTO-ETHMOSPHENOID SINUS OPERATION

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THE purpose of this paper is a consideration of the steps of the technic of the external approach to the frontal, ethmoid, and sphenoid sinuses, and the radical removal of the diseased tissues thus found, as can be done in the truly modern operation based on the work of Jansen¹ and Killian,² in the early part of the century, and of Lynch³ and Sewall⁴ more recently

The aim of this type of sinus operation by the external route is the complete removal of all diseased mucous membrane from within the sinuses and the proper treatment of any disease of their bony limiting walls by the most direct approach through the upper and inner portion of the orbit, where the work may be done under the guidance of direct vision

The first step in preparation for such an operation, especially for chronic sinusitis, is a most careful and accurate diagnosis, in which every attempt is made to demonstrate the nature and extent of the pathologic changes within the sinuses, by means of clinical observation and a painstaking study of a complete set of well-made radiographs, preferably stereoradiographs in four pairs anteroposterior views in both the Caldwell and the Waters positions, a lateral view, and the mento-vertical or base plate view. Such a radiographic study is essential for diagnosis, since it is the only method we have of determining the anatomic arrangement of the sinuses in advance of their surgical exposure. By it, in addition to gaining an idea of the nature and extent of the disease present, we will note the dimensions of the frontal sinuses, the presence of frontal bullar ethmoid cells, or of orbital ethmoid cells behind the frontal sinus proper, we determine the presence of cells in the agger nasi, and of ethmoid cells

above or lateral to the sphenoid sinus, and the dimensions and symmetry of the sphenoid sinuses. This information must be at hand to guide the surgeon in achieving a rapid but complete operative technic

The actual preparation of the patient for the operation is that given for any major surgical procedure. The heart, lungs, blood pressure, urine, bleeding and coagulation times should be investigated, unless an acute emergency exists every possible effort should be made to correct any general pathologic conditions found before attempting the surgical attack

The patient should be given a mild laxative the day before the operation, purgation should be avoided. He may have his usual diet until six hours before the time of operation, unless it is to be done under general anesthesia, when food should not be taken for ten to twelve hours. The surgeon should see that the patient has a restful sleep the night before the operation by giving a suitable barbiturate hypnotic in full dosage. Fluids such as water, carbonated water, or very weak tea may be taken until an hour before the time of operation

The operation is best performed under local anesthesia, unless this is contraindicated by the tender age of a child, or by the presence of orbital infection or other complications such as widespread osteomyelitis or brain abscess, where the length of the operation and wideness of the field usually make it wiser to employ a general anesthetic

When such general anesthesia must be used, induction with the usual gas-oxygen-ether sequence in the ordinary way is best followed by the intratracheal inhalation of ether by the technic of Flagg.⁵ This permits of quiet anesthesia for prolonged

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FIG 1 Injections of local anesthetic

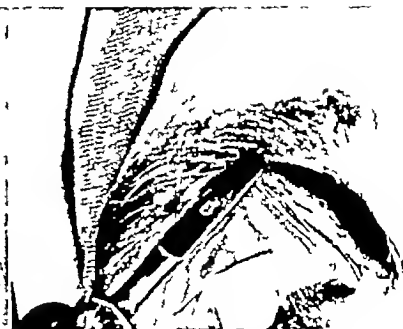


FIG 2 The incision

periods with a minimum of anesthetic and perfect control of the air passages and of the depth of narcosis at all times

Local anesthesia must be supplemented by the use of one of the synergists. Hyoscine and morphine given hypodermically, or hyoscine subcutaneously with pentobarbital sodium by mouth, or tribromethanol in basal dosage given rectally may be used. In each case enough must be given to secure a sleep from which the patient can be roused if necessary, but not so deep a narcosis that asphyxia from relaxation of the tongue can occur. In every instance, since the operation is done with the patient in the supine position, the anesthetist must be in constant attendance to see that obstruction of the airway does not occur, thus watch must also be kept up after removal from the operating table, until the patient is fully awake.

With the sleeping patient on the operating table under good general illumination, his head is inserted in the frontal sinus head frame of Hurd⁶ which holds it rigidly without undue pressure or the need for manual assistance. The entire face is then washed with green soap and water, followed by 95 per cent alcohol, taking care not to let these irritants enter the conjunctival sac, which must be protected by inserting sterile white petrolatum and sealing the lids shut with a bit of sterile adhesive plaster. The hair is bound up, but the eyebrow is not shaved. The vibrissae in the nostril are clipped short and the nasal vestibule cleansed with green soap and water. The face and nasal vestibule may then be painted with

a nonirritating antiseptic dye if desired. The field is draped leaving the landmarks clearly visible, loosely covering the mouth. The usual overhead illumination is used for the first and last steps of the operation, but reflected light and a head mirror or an electric head lamp is necessary for the illumination of the deeper portions of the operative area.

Local anesthesia is secured by the injection of 1 per cent procaine or one of the newer anesthetics in suitable strength with 6 drops of epinephrine 1 to 1,000 added to the ounce of solution. Slender needles and a 3 cc syringe are most useful. The external injections are begun by making skin wheals with a short needle immediately below the supraorbital notch as determined by palpation, a second at a point 1 cc directly above the inner canthus of the lids, and a third halfway between the center line of the nose and the internal canthus at the level of the latter. Through the first wheal the supraorbital nerve is blocked one inch within the orbit by hugging the roof of the orbit with the needle point, $1\frac{1}{2}$ cc of anesthetic are injected after aspiration has shown that the needle point is not in a blood vessel. The anterior ethmoidal nerve is then blocked by a similar injection at the same depth through the second wheal, hugging the medial wall of the orbit with the needle point and again aspirating before injecting a like amount of anesthetic solution. The infratrochlear nerves are blocked by passing the needle downward through the third wheal for an inch and injecting a like amount of anesthetic solution (Fig 1).



FIG 3 Electrocoagulation of vessels in incision.



FIG 4 Freeing of trochlea and periosteum with Spratt curet

The interior of the nose is anesthetized by spraying it three times at intervals of five minutes with small amounts of any suitable surface anesthetic solution and 1 to 1,000 epinephrine, or by packing with pledgets of cotton moistened with similar solutions for twenty minutes. A preferable method is the injection of 1 per cent procaine solution about the anterior and posterior ends of the middle turbinate and the ethmoid region, using a $3\frac{1}{2}$ -inch slender needle, under the guidance of reflected light through a nasal speculum.

When anesthesia of the forehead and upper lid is profound as tested by needle pricks, the incision is outlined with the scalpel point and two cross scratches are made, dividing it into thirds for guidance in closing the wound. The incision is then made through all the soft parts down to the periosteum, it begins below at the level of the internal canthus, halfway between the inner canthus and the middle line of the nose, sweeps upward and outward in a full curve, following the line of the superior orbital margin but just below the eyebrow, and ends a little internal to the supraorbital notch to avoid sectioning the nerve and causing anesthesia of the forehead (Fig 2). If it is known that the frontal sinus extends far laterally, a second incision following the line of the first just below the margin of the orbit is made beginning just external to the supraorbital nerve to allow it to remain in a bridge of soft parts, the outer part of the frontal sinus can be attacked from this second lateral incision.

All bleeding vessels are seized in hemostats and electrocoagulated unless ether is being given, when they must be ligated with plain catgut (Fig 3). When the wound is bloodless, the periosteum is cleanly incised exactly in the line of the skin incision. The elevation of the periosteum of the inner wall of the orbit is then begun below the center of the incision with a submucous elevator, is carried backward and downward until the top of the lacrimal fossa and sac are exposed, and upward and outward until the adherent point of attachment of the trochlea of the superior oblique muscle is encountered. The periosteum is freed all about this point until a Spratt curet with bowl upward can be passed behind it and used to detach pulley, periosteum and all from the bone, from behind forward (Fig 4), in this way trauma to the pulley and subsequent diplopia will be avoided.

The elevation of the periosteum, which must not be buttonholed, is carried backward until the anterior ethmoid vessels are reached, the guide to these structures is the suture line between the frontal bone above and the orbital plate of the ethmoid bone below. The vessels and nerve in their sheath of periosteum are outlined, and the orbital contents gently retracted outward. Undue pressure on the globe must be avoided throughout the operation, self-retaining retractors may be used if preferred (Fig 5). When the vessels can be clearly seen they are ligated close to the orbital periosteum with silk, using a very small ring curet as a ligature.

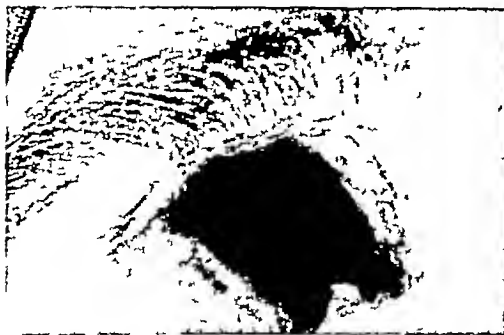


FIG 5 Orbital retractor exposing anterior ethmoidal vessels



FIG 6 Entering floor of frontal sinus with Thornwaldt trephine

carrier, or they may be clamped and coagulated. They are then cut close to the anterior ethmoid foramen, there will be slight bleeding from this end for a few moments. It is not advisable merely to tear these vessels, for while there may be no great hemorrhage, the torn vessels occasionally retract into the orbit, bleed into the soft tissues and cause a most troublesome hematoma. The posterior ethmoid vessels are then exposed, injecting additional anesthetic should there be pain deep in the orbit, and treated in a similar manner. This step renders the fronto-ethmoid portion of the operation almost bloodless.

The frontal sinus floor is then entered at a convenient point in its inner half with a trephine (Fig 6) or curet. The entire floor is then quickly bitten away with forward-cutting bone forceps up to the margin of the orbit above (Fig 7), and with straight-cutting bone forceps backward and outward to the limits of the frontal sinus. The mucosa of the frontal sinus is then removed completely with forceps (Fig 8), curved curets, and by scrubbing with small balls of gauze. The interior of the sinus can be readily inspected by the use of a laryngeal mirror, preferably attached to a small electric lamp (Fig 9). Every shred of mucosa *must* be removed, especially in the corners, on the under surface of the anterior wall, and in the upper part of the sinus. This will only be difficult if the sinus extends far upward and is narrow at its floor. If the sinus mucosa in the very roof of the sinus can-

not be reached from below, the technic of Killian must be applied, as will be described below.

When all of the frontal sinus mucosa is gone and its bony walls have been carefully inspected for disease (Fig 10), the exenteration of the ethmoid cells is begun. The bony walls of one or more anterior cells are readily seen in the nasal part of the frontal sinus floor, and the nasofrontal duct into the nose can be readily probed. With a sharp nasal punch forceps, the orbital plate of the ethmoid bone is bitten away, forward to the top of the lacrimal fossa, which must not be damaged if disturbance of the tear sac is to be avoided, backward to the level of the anterior ethmoidal foramen, and downward to a line joining these two points. Wider removal of the plate is seldom necessary unless it is necrotic, too free removal may allow the globe to retract during the healing process and cause a disfiguring enophthalmos.

With this removal of part of the orbital plate several ethmoid cells will have been opened from above, their mucosa is now removed and their lower walls punched away (Fig 11) until a large opening is made into the middle meatus of the nose, tags of mucosa and bone are carefully cleaned away until the outer surface of the middle turbinate can be seen. It is especially important to remove all far-forward cells until the internal surface of the frontal process of the maxilla is reached, cells in the agger nasi will be opened from above if this step is complete. Orbital ethmoid cells lying behind



FIG 7 Biting away frontal sinus floor with forward-cutting bone forceps



FIG 8 Removal of frontal sinus mucosa

the frontal sinus, as noted in the radiographs, are opened by the removal of the bone of the posterior wall of the sinus immediately above the anterior ethmoidal foramen and carefully cleaned out. The posterior ethmoid cells are then opened in series from before backward, without further removal of the orbital plate if possible. Their mucosa and inner lower walls are punched away until the anterior wall of the sphenoid sinus, the posterior choana, and the posterior part of the nasal septum are clearly visible.

The anterior wall of the sphenoid sinus is now illuminated and the orifice probed, if the interior of the sinus is not anesthetic, it can be made so by instilling a few drops of surface anesthetic solution with a sphenoid cannula and syringe. The orifice is enlarged with a curet or Sluder hook knife until forward-biting forceps can be inserted and the anterior sphenoid wall removed to its limits upward, inward, and outward, and fairly well downward. If the sinus mucosa is badly diseased, the nasal mucosa of the sinus floor is elevated downward and backward toward the nasopharynx, a ligature in a special needle is passed through the mucosa laterally near the nasal wall, and the sphenopalatine vessels tied off in the mucosa. The nasal mucosa near the septum is now cut with nasal scissors with minor bleeding, and the floor of the sphenoid sinus can be bitten away with heavy forceps until the cavity drains directly downward into the nasopharynx. The sphenoid mucosa is then very carefully and gently removed,

and the nasal mucosal flap is folded upward into the sinus cavity. If the other sphenoid is known to be diseased, the intersphenoid septum is bitten away, and the upper portion of the anterior wall of the second sphenoid sinus is removed. The second sphenopalatine artery should not be tied off for fear of necrosis of the nasal septum. If it is desirable to create a very large opening into the common sphenoid sinuses, a portion of the upper posterior part of the nasal septum may be punched away, in addition. Ethmoid cells above or lateral to the sphenoid sinus must be sought for and opened as widely as possible.

With the cleansing of all debris from the field with suction and forceps, the main portion of the operation is complete. There remains only the treatment of the opening from the nose into the frontal sinus cavity, which must be kept open until healing is complete. This constitutes the most troublesome problem of the modern operation, which is not yet fully solved. During healing, granulation tissue springs up rapidly on the exposed periosteum of the orbit, and much more slowly on the bare bone of the frontal sinus cavity, the orbital granulations may shut off the sinus cavity from the nose and prevent the ingrowth of nasal mucosa, there will thus be a cavity in the sinus separated from the nose by scar tissue, which may readily become infected again and cause an orbital abscess.

In an endeavor to maintain the patency of the nasofrontal opening until it becomes



FIG 9 Use of laryngeal mirror in removal of frontal sinus mucosa



FIG 10 Frontal sinus after removal of all mucosa

fully epithelized and the cavity of the frontal sinus lined again with healthy mucosa or scar tissue, many means have been employed. Of these, the simplest is the wearing of soft rubber tubes of large diameter in the opening for six to eight weeks, the tubes are changed at intervals, this is painful and traumatizing, and the opening often closes by the contraction of the heavy scar tissue formed. A second method is the forming of a mucosal flap from the upper part of the nasal septum and using it to cover the exposed orbital periosteum. This procedure is technically not easy, and as the flap has a slender pedicle, it may necrose.

The method preferred by the author is the covering of the periorbita with a very thin epidermal graft, taken from the anterior surface of the thigh, applied with its raw surface to the periorbita, and maintained in position with light pressure by the inflation of a special rubber bag designed by Ferris Smith,⁷ which is placed in the sinus cavity (Fig 12). This is left in place for four or five days, deflated and withdrawn from the nose.

The incision is closed with skin clips or interrupted vertical mattress sutures, with care to secure accurate approximation without distortion in order to produce a minimal scar. The adhesive is removed from the eyelids, the conjunctival sac again filled with sterile white petrolatum, and a snug but not tight pressure dressing is applied in the manner of the usual eye bandage, with pads of gauze over the orbit to cause gentle upward and backward

pressure. The nasal cavity need not be packed unless there is continued oozing of blood.

The dressing is changed every other day and can usually be discarded for a patch or cocoon over the incision alone after the stitches have been removed on the fifth or sixth day, skin clips should be removed in forty-eight hours. Post operative general treatment is that given after any major procedure about the head. The interior of the nose is kept filled with sterile white petrolatum inserted several times a day from a large syringe. In the later stages, crusts are removed with suction or forceps, and granulations kept down by electrocoagulation or solid silver nitrate, adhesions must be broken up, or electrocoagulated until they no longer form.

The question as to whether a bilateral fronto-ethmosphenoid operation be done at one sitting, and infected maxillary sinuses left for a second operation, or whether all of the sinuses on one side should be done at once, by adding the radical antrum operation at the close of the technic on the upper sinuses of the same side, is a matter of choice.

The advantages of this type of procedure over the intranasal operation are (a) that it alone allows of direct approach to the upper sinuses, (b) that it allows performance of the operation under the guidance of direct vision throughout, (c) that it permits complete removal of all diseased mucosa from all of the upper sinuses as no type of intranasal operation



FIG 11 Exenteration of ethmoid cells from above



FIG 12 Thin epidermal graft placed against periorbital and held by rubber balloon

can do, (d) that it allows of proper treatment of disease in the orbit secondary to sinusitis, (e) that the operation is done in an almost bloodless field, (f) that the middle turbinate need not be sacrificed, avoiding the risk of meningitis from opening the olfactory nerve sheaths on its inner surface and the possibility of a dry nose from loss of mucosa, (g) mild deviations of the nasal septum do not interfere with the external operation so that preliminary submucous resection will only occasionally be necessary, (h) when none of the anterior wall of the frontal sinus is removed, the possibility of osteomyelitis of the frontal bone through infection of the open diploe in the anterior wall is remote. The one single *disadvantage* is that an external incision must be made, and a small scar, almost invisible after six months, is produced on the face.

With the Jansen-Lynch technic described above, there is no external deformity whatever, if the Killian operation must be done, there will be a depression in the forehead, which will be marked only when the frontal sinus is wide, high, and deep near its floor. This deformity can be corrected by the insertion of split skin or fascia lata grafts in subcutaneous pockets to fill the depression, one should wait a year after the sinus operation before such a plastic is done.

In contrast to the external operation, the intranasal attack on the upper sinuses is difficult because of the relative inaccessibility of the area, because of the depth and darkness of the field, and the

free bleeding. One must usually do a preliminary submucous resection for good access to the ethmoid cells, and remove the middle turbinate. All of the frontal sinus mucosa cannot be removed from below, nor can orbital ethmoid or perisphenoid ethmoid cells be fully opened by the present-day intranasal technic. The chief advantage of the intranasal route is the avoidance of the facial scar.

The *positive indications* for the radical type of operation are those conditions in which there is general agreement that the external operation *must* be performed, these are (a) orbital abscess from rupture of a sinus into the orbital contents, (b) when a chronic suppurating fistula into the orbit follows acute orbital infections of sinus origin, (c) for the removal of foreign bodies from the interior of any of the upper sinuses, (d) for the removal of mucocele and other cysts and of new growths, (e) for the treatment of fracture of the sinus walls with secondary infection, (f) in severe chronic purulent pansinusitis, especially when there are marked local and focal symptoms, and (g) with failure to cure suppuration in the frontal or sphenoid sinuses following intranasal surgery. *Relative indications* in which the external approach is usually preferable but not always a necessity are (a) in less severe and extensive chronic purulent pansinusitis which can be brought under reasonable control by well-done intranasal operation and (b) when intranasal surgery has failed to reach orbital or perisphenoid ethmoid cells which remain infected.

The *intranasal type* of operation is *indicated* when there is insuperable objection by the patient to the external incision and scar, and when the sinus infection is mild.

The *difficulties* of the external operation are largely technical and are (a) in the complete removal of all frontal sinus mucosa from the periphery of a shallow but high and wide sinus, with care, this can often be accomplished, but if the upper margin of the sinus cannot be reached from below, it is necessary to use the Killian technic. The skin of the forehead is undermined upward from the outer two-thirds of the incision described above, leaving the subcutaneous tissues attached to the orbital margin. The periosteum of the frontal bone one full centimeter above and parallel to the orbital margin is incised, and the periosteum and soft parts are elevated freely upward from this line, the flap so formed is strongly retracted upward to expose the anterior wall of the frontal sinus. A groove is cut through this wall with the V-chisel of Killian in the line of the periosteal incision. The anterior wall of the frontal sinus above this groove is then completely removed with bone forceps, and the margins of the opening freely beveled, all sinus mucosa is removed with forceps and curet. The flap of soft parts is replaced, and packed into the depression made by the opened sinus with pledgets of gauze. The incision is closed and a firm pressure dressing applied for five to seven days. This procedure is done in addition to the Jansen-Lynch technic already described. (b) The second difficulty is the work on the sphenoid sinus, especially if there are perisphenoid ethmoid cells to be found and opened, such difficulties are overcome with good illumination, a bloodless field, and good technic.

The *possible dangers and complications* of the external operation are all rare and are (a) accidental perforation of the posterior wall of the frontal sinus or the roof of the ethmoid cells, such accidents are much more likely to occur with the intranasal technic because of the difficulty in seeing the field, (b) trauma to the orbital contents which must be avoided by

gentle retraction, (c) hematoma of the orbit due to pricking a vessel with the needle when injecting local anesthetic solution, or to the slipping of the ethmoid vessels back into the orbit if they are not properly ligated, (d) damage to the trochlea of the superior oblique ocular muscle, avoided by careful elevation of the orbital periosteum, (e) damage to the cornea to be avoided by closing the lids during the operation, (f) stitch abscess, (g) postoperative hemorrhage from the nose which must be controlled by proper nasal packing.

The *results*, when the operation is properly done in correctly selected cases, are excellent. If the opening into the frontal sinus or sphenoid is not maintained, continued suppuration is likely to follow the poor drainage, and a second operation will be necessary. Occasionally, the upper lid will swell and become congested during an acute coryza following the Jansen-Lynch type of operation, because of congestion in the frontal sinus cavity which no longer has a bony floor. This process will usually subside with a wet dressing over the orbit and intranasal shrinking, and douching of the frontal sinus, once in a while an orbital abscess will form and require an opening through the upper lid for drainage.

Summary and Conclusions

The technic of the modern external or radical approach to the frontal, ethmoid, and sphenoid sinuses is described and illustrated. The indications for the operation, the advantages over the intranasal technic, the dangers and possible complications, and the results have been described. While the author does not advise the use of the external approach in every patient with a chronic pansinusitis, its many advantages make it deserving of more widespread use. The disadvantage of the small facial scar is a minor one. The technical difficulties of the external operation in well-trained hands are no greater but rather less than in intranasal sinus surgery.

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Discussion

Dr Arthur Palmer, *New York City*—One of the most interesting and important problems the rhinologist faces today is the diagnosis and adequate treatment of sinus disease.

Too often have the measures adopted in the treatment of sinusitis, whether medical or surgical, proved inadequate and left the patient and the consultant dissatisfied.

In the minds of many of the laity, surgery of the sinuses is something to be avoided if at all possible. Indeed the medical profession agree with this point of view if the surgery performed is ill advised, unskillful, or incomplete.

Patients suffering from sinusitis will testify to the salubrious effect of a warm, dry climate, but unfortunately many individuals cannot afford to change their climate in an effort to cure their sinusitis condition.

In his excellent paper Dr Morrison has stated in great detail the steps of the external fronto-ethmosphenoid operation, and I believe that were the procedure carried out, when indicated, as meticulously as the author describes, all persons concerned would be well satisfied with results obtained in a high percentage of cases.

The chief complications we have met with at the New York Hospital have been hemorrhage and fistula. The first can be largely avoided by careful control of the anterior and posterior ethmoidal and the sphenopalatine vessels and the second by complete removal of diseased membrane and by providing permanent drainage of the unobliterated portion of the frontal sinus through the nose.

Two points in the technic as described by Dr Morrison should especially commend themselves to the surgeon—namely, only one sphenopalatine artery is tied off, thus avoiding the danger of necrosis of the septum known to have occurred when the blood supply was obliterated by tying off both arteries, and the insertion of an epidermal graft over an inflated rubber bag to maintain the patency of the nasofrontal duct.

Quite as important as proper technic is the proper choice of the case to be operated. Dr Morrison has enumerated the indications for the operation clearly, and I agree with these with only minor reservations. I do not think the complete operation is indicated in acute orbital

abscess of ethmoidal origin. These cases do well when adequate drainage is provided through the external route without complete extirpation of the ethmoid capsule.

Fixed rules applying to every particular patient can hardly be set. Procedures will vary depending upon the preference of the surgeon and the personal qualities and condition of the patient.

When surgery of the antrum is indicated in addition to that of the ethmoid and sphenoid, we are inclined to perform this at a later date lest the patient's energies be too severely taxed.

We should constantly keep in mind the fact that all treatment of sinus diseases, whether medical or surgical, should have as its objective the improvement of the physiologic functions of the nose and sinuses. Ruthless destruction of a functioning nasal or sinus membrane is to be condemned.

In many instances nonsurgical measures will be sufficient to bring about marked improvement. Again, intranasal surgery of the ethmoid labyrinth will prove satisfactory within the strict limitations of its indications. In skilled hands little risk attends this procedure. There still will remain a group of cases, as Dr Morrison has clearly indicated, where the external operation is the procedure necessary to accomplish a satisfactory result. His paper has been most interesting and instructive.

Dr H. G. Klue, *Syracuse, New York*—This study presents a very graphic picture of the upper respiratory tract as a focus of infection. The description of the nasal sinuses and their relationship to the surrounding parts is given with clearness and simplicity. The detailed routine of the operation is very comprehensive. It makes no mention of the background built up of this highly specialized body of scientific knowledge and technic, the exhaustive preparation which made this knowledge and skill possible, the endless work on the cadaver under trained experienced supervision, in addition to the practice and the experience in the clinic and operating room under qualified surgeons and other personnel, or the complementary services of the x-ray and laboratory experts. All of this has gone into the making for accuracy of diagnosis, good surgical judgment, and technic.

When the intranasal treatment and surgery have failed to relieve the fronto-ethmosphenoid involvement, the external operation is definitely indicated. Much of the intranasal work has been attempted, in most cases, before the patient presents himself with the fronto-ethmosphenoid condition in which case the need for the external operation is evident and imperative.

Little can be added to or taken from Dr Morrison's explanation of this operation as he performs it. Through the trial-and-error methods of the earlier surgery the external operation has been reduced to a fairly exact science, whether it be a Lynch and Sewall or a modification of Jensen and Killian. Each situation is an entity in itself, to be met as the conditions demand—conditions that cannot be foretold by the x-ray and clinical diagnosis.

To me this operation presents less strain, both for the surgeon and the patient, when done under general anesthesia. Under general anesthesia it is possible to modify or interrupt the anesthetic. In the case of either general or local anesthesia it is essential to have a thoroughly qualified anesthesiologist and an entirely cooperative one.

In making the incision I like to have as much space open for the field of operation as is compatible with safety and the subsequent condition of the face. An incision is made extending into the nasal process of the maxillary bone, up, and

across to the eyebrow. The tear sac is freed in its entire extent, the anterior ethmoid vessels and nerve are left intact, which makes the first landmark. The freeing of the pulley is the second landmark. The ethmoids are first cleaned out, and then the frontal duct is followed up to the sinus. I have never found the removal of the entire floor either necessary or desirable. Most of my work is done with the aid of a suction dissector which obviates much of the use of other cleansing procedures in the infected field.

I find great caution necessary in the removal of the membrane of the anterior wall of the frontal sinus, unless it is of a polypoidal nature. The danger of an osteomyelitis of the frontal bones, with an extension into the skull, should always be uppermost in the surgeon's mind.

The value of this study lies not only in a picture of the sinuses and the surgical procedure but in its emphasis on the fact that the upper respiratory tract may be a potential storehouse and distributor of infection and disease.

RECORD-BREAKING CANCER REPORT

Prompt and adequate response by the practicing physicians of upstate New York to the new law requiring the reporting of cancer is evidence of the first successful venture of its kind anywhere in this country and probably in the world, says *Health News*.

Over twelve thousand reports of cancer cases have been received by the department's Division of Cancer Control since January 1, 1940. These results demonstrate remarkable concerted effort on the part of the medical profession in the upstate area in gathering scientific information about cancer. The number of cases reported compares favorably with results obtained in the past by means of expensive special surveys made to procure similar data. Moreover, the reports now being made by physicians, hospitals, and laboratories are of much greater scientific value, because in over 70 per cent of the cases they are accompanied by data from the pathologic laboratory regarding the microscopic character of the tumor.

Efforts in other states to obtain reporting of cancer have been ineffective for the most part, chiefly because of failure to enlist the support of the medical profession. New York State physicians are keenly interested in advancing the control of cancer and are alert to the possibilities of cancer reporting as a means of advancing knowledge concerning this disease.

The reports are handled with the utmost care to preserve their confidential nature and are used for scientific analysis only. In many cases, however, physicians reporting cases have asked for assistance either with respect to special treatment or with regard to consultation service. One physician was confronted by the problem

of a patient who refused to accept his advice to obtain prompt treatment of a cancer which was discovered in the course of treatment of another ailment. At the request of the physician, a public health nurse visited the patient and urged that the advice given be followed. The patient consented and was found to have early cancer with a 90-per cent chance of complete cure. Visits are not made to patients except at the request of the physician.

The cancer reports are being subjected to detailed analysis from various standpoints, but it is too early to make any announcement of the findings. One of the most important problems is to determine how people who develop cancer differ in other respects from people of the same age and sex who remain free from the disease. There are a number of highly suggestive clues to such differences which, if substantiated, would be of great value in controlling and even preventing cancer. An unexpected advantage of cancer reporting is the opportunity it affords to gather information as to the relationship of cancer to previous benign tumors in the same patient. More than 1,000 cases of such tumors and other benign conditions are being reported each month, so that it will be possible by careful check over a number of years to determine how frequently a particular type of benign lesion is followed by a malignant or cancerous tumor.

The reports will be used further as a measure of the success of the cancer program in various localities. Such an index to the relative effectiveness of specific control measures is of great value since it will indicate which measures are worth continuing and in what areas efforts must be intensified.

PULMONARY TUBERCULOSIS

Factors Having a Bearing on Its Spread in New York City*

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EPIDEMIOLOGIC studies of tuberculosis were undertaken at the New York Hospital in the fall of 1933 by members of the hospital staff and the staff of the International Health Division of The Rockefeller Foundation. The primary purpose of this project was to study tuberculous families and through continued observation of sources and their contacts to trace the spread of infection among their members. As the work progressed other investigations having a bearing on the incidence and control of tuberculosis in New York City were undertaken, the most important being an exhaustive clinical and epidemiologic evaluation of the management and treatment of 150 cases of the disease cared for in different local institutions. This study, recently completed, provides the subject matter of the present paper. The 150 persons included in the study are classified in Table 1 according to age grouping and sex.

TABLE 1—AGE GROUPING AND SEX OF PATIENTS INCLUDED IN STUDY

Age at Onset	Male	Female	Total
10-19	11	19	30
20-29	27	33	60
30-39	17	17	34
40-49	17	4	21
50+	4	1	5
Total	76	74	150

The criteria for selection of these cases were that they be of relatively recent origin, diagnosed by a private physician or an institution in New York City, and that the patients be sufficiently intelligent to give reasonably adequate and accurate accounts of the incidents connected with their disease. Information concerning the cases was obtained by a recheck of the case histories and reinterrogation of the

patients, particularly with reference to their early symptoms, conditions making for prompt or delayed diagnosis, consultations with and treatment by private physicians and by clinics, their hospital experiences, and the status of their sputum at various periods when they were at home and away from home. This information was augmented through correspondence with various institutions where they had been examined or treated.

The observations are discussed below under the following subdivisions: (1) the interval from the onset of symptoms to diagnosis, (2) the interval from diagnosis to the initiation of definitive treatment, (3) summary of the treatment in each case, (4) periods spent at home and away from home after diagnosis was made, and the status of the sputum during these periods.

Interval from the Onset of Symptoms to Diagnosis

This period is of particular importance epidemiologically, for, although the great majority of persons with tuberculosis have tubercle bacilli in the sputum before diagnosis is made, they are unaware of their condition and of the fact that they are a menace. They accordingly remain at home in contact with their families and friends and fail to exercise any of the specific precautions generally initiated after a diagnosis is established. There are many factors that influence the menace constituted by an individual with unrecognized tuberculosis in a community. The most important of these are the time he remains at large with the disease and the status of his sputum. The former, at least, can be determined with reasonable accuracy. Table 2 contains data on the periods during which symptoms were present in the 150 persons under study before the disease was recognized, and Table 3 gives the stage of involvement

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TABLE 2—INTERVAL FROM ONSET OF SYMPTOMS TO DIAGNOSIS

Interval, Months	Minimal			Moderately Advanced			Far Advanced			Unknown			Total Cases
	Pos *	Neg *	Un known *	Pos	Neg	Un known	Pos	Neg	Un known	Pos.	Neg	Un known	
0-1	4	9	1	5	6	0	4	0	0	0	1	1	31
1-2	1	2	0	13	2	0	4	0	0	1	0	3	26
2-3	2	2	0	1	3	0	1	0	0	1	0	0	10
3-4	0	4	1	5	0	0	3	0	0	1	1	3	18
4-5	0	0		5	0	0	2	0	0	0	0	0	85
5-6	1	0		1	1	1	2	0	0	0	0	0	7
6-7	1	1	0	5	0	1	3	0	0	1	0	0	6
7-8	0	1	0	3	0	0	3	1	0	0	0	0	12
8-9	0	1	0	1	0	0	0	0	0	0	0	0	3
9-10	0	1	0	1	0	0	2	0	0	0	0	0	2
11-12	0	0		1	1	0	2	0	0	0	0	0	4
													43
12-18	0	1	0	4	1	0	1	0	0	0	0	0	7
18-60	0	1	0	3	1	0	8	1	0	0	0	1	16
													22

* Sputum—in all tables Pos, Neg and Unknown indicate respectively with tubercle bacilli in the sputum with no tubercle bacilli in the sputum and no information regarding tubercle bacilli in the sputum

TABLE 3—STAGE OF DISEASE AND STATUS OF SPUTUM AT TIME OF DIAGNOSIS

Extent of Lesion	Number of Cases	Percentage	Status of Sputum	Number of Cases	Percentage
Minimal	34	22.7	Positive	96	64.0
Mod. advanced	65	43.3	Negative	42	28.0
Far advanced	37	24.7	Unknown	12	8.0
Unknown	14	9.3			

TABLE 4—CORRELATION OF INTERVAL FROM ONSET TO DISCOVERY OF DISEASE WITH STAGE OF DISEASE AND SPUTUM STATUS

Interval Months	Minimal percentage	Stage at Diagnosis			Sputum Status		
		Mod adv percentage	Far adv percentage	Unknown percentage	Pos percentage	Neg percentage	Unknown percentage
0-4	30.6	41.1	14.1	14.1	54.1	35.3	10.6
4	12.3	46.1	38.5	3.1	76.9	18.5	4.6

and the status of the sputum with relation to the tubercle bacillus at the time the diagnosis was established

It will be noted that there was great variation in the length of time elapsing between the onset of symptoms and the establishment of diagnosis. In 31 cases (20.7 per cent) the diagnosis was made either before symptoms developed (contact cases, etc) or at most within one month after they were first noted. In an additional 26 cases the diagnosis was also very prompt, the interval between development of symptoms and diagnosis being under two months. Twenty-eight other cases that were relatively well handled fall within the two to four months' group. On the other hand, in 22 cases (14.7 per cent) symptoms were present for over one year and up to more than five years before a diagnosis was made. The aggregate delay involved in this group was 942 months or an average of

42.8 months per case. Some of the patients in this group had never sought medical advice previously, others had consulted physicians who failed to detect the disease. In the remaining intermediate group of 43 cases diagnosis was not established until symptoms had been present for from four to twelve months, and it would seem obvious that some avoidable delay must also have occurred in many of them. It will be noted as well that only 22.7 per cent of the cases showed minimal involvement when diagnosed, while 68.0 per cent had progressed to moderately or far advanced disease. In 9.3 per cent the stage could not be determined, and 64.0 per cent of the entire group had sputum containing tubercle bacilli when the diagnosis was established.

There was some correlation between the duration of symptoms in these cases and the extent of lesion at diagnosis. The

TABLE 5—CORRELATION OF SYMPTOMATOLOGY WITH INTERVAL TO DIAGNOSIS AND STATUS OF SPUTUM

Interval from Onset of Symptoms to Diagnosis, Months	General Symptoms			Special Symptoms				Contacts			Total	
	Mild	Moderately severe	Severe	Hemoptysis	Chest pain	Dyspnea	Striking	Hoarseness	Contacts	Contact Mantoux		Incidental
0-1	2	1	0	5	5	1	1	1	12	0	3	31
1-2	1	7	5	5	6	0	0	1	1	0	0	26
2-3	1	4	1	0	1	1	0	0	1	1	0	10
3-4	1	7	1	2	2	0	0	0	4	0	1	18
4-5	0	2	1	2	1	0	1	0	0	0	0	7
5-6	1	2	1	1	0	0	0	0	0	1	0	6
6-7	0	4	2	1	1	1	0	0	1	0	2	12
7-8	0	3	4	1	0	0	0	0	0	0	0	8
8-9	0	2	0	0	0	0	0	0	0	0	0	2
9-10	0	1	1	0	1	0	0	0	0	0	0	4
11-12	0	2	1	0	0	0	1	0	0	0	0	4
12-18	1	1	1	2	0	0	0	0	1	0	1	7
18-60	2	5	4	1	0	1	0	0	1	1	0	15
Total	9	42	22	20	17	4	3	2	21	3	7	150
Status of Sputum	{ Positive	4	30	20	13	10	3	2	7	1	3	96
	{ Negative	5	8	0	5	6	1	0	13	2	2	42
	{ Unknown	0	4	2	2	1	0	0	1	0	2	12

TABLE 6—PERCENTAGE CORRELATION OF SYMPTOMATOLOGY WITH STAGE OF DISEASE AND STATUS OF SPUTUM AT TIME OF DIAGNOSIS

	No of Cases	Stage				Sputum Status		
		Minimal percentage	Mod adv percentage	Far adv percentage	Unknown percentage	Pos percentage	Neg percentage	Unknown percentage
1 General symptoms	73	12.3	47.9	30.1	9.6	74.0	17.8	8.2
2 Special symptoms	46	19.6	45.7	28.2	6.5	67.4	26.1	6.5
3 Contacts etc.	31	51.6	29.0	6.5	12.9	35.5	54.8	9.7

percentage details given in Table 4 demonstrate that, among cases diagnosed relatively early (0-4-month group), 30.6 per cent were minimal and 55.2 per cent more advanced, while, when delay was relatively great, only 12.3 per cent were minimal and 84.6 per cent advanced. Furthermore, of the total of 34 minimal cases in the series, 26 gave a history of less than four months' illness, while only 8 had had symptoms for a longer period of time. With regard to the sputum status, it will be seen that 54.1 per cent of the cases with a relatively short interval to diagnosis were found to have tubercle bacilli and 35.3 per cent no tubercle bacilli. When diagnosis was delayed beyond four months, 76.9 per cent were positive and only 18.5 per cent negative.

These observations indicate the great importance of reducing the time interval to diagnosis. They suggest that improvement in this direction could readily be brought about if the interminable and apparently inexcusable delays that occur in many instances after the beginning of clear-cut symptomatology were obviated through a fuller understanding

of the underlying causes. The study accordingly included an investigation of the factors as far as they could be ascertained, making for expedition of diagnosis in some cases and delays in other cases. Such factors seemed concerned mainly with the clinical picture in each case and the reaction of the patient and physician to this picture.

The Clinical Picture—As pulmonary tuberculosis is a relatively chronic disease and protean in its manifestations, the clinical pictures are markedly diverse as to the initiation of illness, as to the evolution of disease, and particularly as to the type and severity of those symptoms that might call the attention of the patient to his illness and induce him to seek medical advice and also those that might suggest to the physician the presence of serious organic disease. In order for us to secure insight into these factors, all patients were reinterrogated as to the sequence of events and the symptoms or syndrome that finally led to diagnosis in each case. These data are set down in Table 5, giving the symptom or symptom complex leading to diagnosis together with the

corresponding time intervals and the sputum status, and in Table 6, showing the correlation between the diagnostic symptom or symptoms with the stage of disease and the presence or absence of tubercle bacilli in the sputum at the time of diagnosis

These tables are self-explanatory, but a few points are worthy of mention. The cases may be roughly divided into three classes with regard to symptomatology leading to diagnosis: those with general symptoms, mild, moderate, or severe, those predominantly with symptoms producing alarm, discomfort, or pain (special symptoms), and those without symptoms or with mild symptoms that were disregarded, the cases being discovered through contact or incidental examinations. The group with general symptoms embraces 73 cases and in all except 9 of these the symptomatology had become severe when these persons sought medical attention or at least when the cases were diagnosed as pulmonary tuberculosis. This suggests that patients infrequently seek medical relief for the mild general symptoms characteristic of early disease. At the same time, our histories indicate that physicians frequently fail to make adequate examinations of persons with these relatively mild complaints, and in such persons cases of tuberculosis often escape detection. They also suggest that even severe general symptom complexes are often disregarded for long periods of time by patients, and occasionally by physicians, if they develop insidiously and are not incapacitating or associated with alarming signs. Accordingly, the great majority of cases in this group are advanced and with positive sputum when diagnosed.

The second group of 46 patients sought medical advice leading to diagnosis because of hemoptysis, chest pain, sudden dyspnea, blood streaking of sputum, or laryngeal symptoms. The discomfort or alarm associated with these conditions made for early definitive action after they developed, although generally mild or severe symptoms had in some cases been present previously and were disregarded.

Accordingly, this group also showed, as a rule, moderate to far advanced involvement at the time diagnosis was made, and only 9 out of 46 persons had minimal disease. On the other hand, as shown in Table 6, the average extent of involvement and the percentage of positive sputum cases were less in Group 2 than in Group 1.

The third group includes 31 patients discovered through contact or incidental examinations. Five of these were asymptomatic, while the remainder had had symptoms for varying brief periods of time but these had not been sufficiently severe to induce the patients to seek medical advice. Accordingly, as shown in Table 6, 51.6 per cent of the 31 cases in this group were of minimal involvement and 54.8 per cent had negative sputum.

Reaction of the Patient and Physician to the Clinical Picture—Irrespective of the clinical picture, the reaction of the patients to their symptoms differed markedly, and this was probably the most important factor making both for early diagnosis in some cases and for marked delays in others. Case histories indicate that some patients consulted physicians or clinics even for trivial symptoms, but a larger number ignored those of a more severe character for considerable periods of time. The histories indicate as well that, though many cases were efficiently handled after the patients had sought medical advice, a considerable percentage of the total loss in time between the initiation of symptoms and diagnosis was due to failure on the part of the physician or clinic to detect the disease promptly after patients had consulted them. Though one cannot determine definitely all of the circumstances making for delay in diagnosis in a particular case or evaluate accurately the responsibility of the patient, physician, or clinic for delays, it was possible to secure what would appear to be reasonably accurate records concerning these points. The data are given in Table 7 and indicate that an aggregate interval of 1,417 months elapsed between the onset of symptoms and diagnosis in the 150 cases and that the responsibility

TABLE 7—ALLOCATION OF RESPONSIBILITY IN MONTHS FOR INTERVAL FROM ONSET OF SYMPTOMS TO DIAGNOSIS

Interval Months	No of Cases	Aggregate Interval	Average, Months	Patient	Physician	Clinic
0-4	85	155	1.8	119	20	16
4-12	43	320	7.4	161	138	21
12-60	22	942	42.8	700	211	31
0-60	150	1,417	9.4	980	369	68

for the interval or delay lay with the patients for a total of 980 months (an average of 6.5 per person), with the physician for 369 months, (average 2.5), and with a clinic or hospital for sixty-eight months (average 0.5)

In Table 7 the cases are divided into three groups on the basis of the length of the interval from the onset of symptoms to diagnosis i.e., those in which the interval was short, those in which moderate delay occurred, and those in which the delay was markedly prolonged. This was done in order to prevent a small number of cases with great delay from unduly influencing the general average and also to give a more accurate picture of the variations in intervals and responsibility for delay.

Interval from Diagnosis to Initiation of Definitive Treatment

Definitive treatment is considered as having been initiated at the time a patient entered an institution or, if he remained at home, at the time a prescribed regimen was undertaken under professional supervision.

Persons found to have pulmonary tuberculosis were recommended for hospitalization or sanatorium care in the great majority of cases, and all except 11 were treated for varying periods in one or more institutions. Where the symptomatology was very severe, as in cases with hemorrhage, great pain, fever, and marked debility incident to advanced and prolonged disease, emergency admission by the agency making the diagnosis was sought. This was also the case where patients with highly positive sputum lacked adequate facilities at home for their isolation or where home conditions were obviously unsatisfactory even for temporary care of the patient. On the other hand, patients not requiring emergency treatment were handled in the

routine way of city clinics in general, and they remained at home for longer or shorter periods of time depending on the length of the waiting list of the institution in which they were to be hospitalized.

As shown in Table 8, the initiation of treatment was prompt in 83 cases, the patient being admitted to an institution immediately or within one month after diagnosis was made. In 35 other cases a period of from one to a maximum of four months elapsed before treatment, while in 21 cases there was great preventable delay before final hospitalization.

Probably the most frequent preventable cause of delay in hospitalization was incident to the "waiting list" or period of time that elapsed between the recommendation of the patient for institutional care and his admission to the hospital or sanatorium. This varies considerably at different seasons of the year and with different institutions and may amount to three months or more. Such delays demoralize the patient. They may cause the spread of his lesion or the infection of other members of the household, particularly as patients awaiting hospitalization are difficult to handle and discipline. A few patients in this series became discouraged after a long period of delay and finally refused to go to any sanatorium. The condition cannot be remedied until the number of beds available for the treatment of tuberculosis has been considerably increased, for the waiting list is the result of the discrepancy between the bed capacity of the institutions and the number of persons seeking admission. This discrepancy would also appear to be responsible in many cases for the early discharge of patients in order to make a place for others. On the other hand, improvement in the situation might be brought about if patients were discouraged from selecting the sanatorium in which they are to be treated and if they could be in-

TABLE 8—INTERVAL FROM DIAGNOSIS TO DEFINITIVE TREATMENT

Interval	Stage at Diagnosis				Sputum Status at Diagnosis			
	Minimal	Mod adv	Far adv	Unknown	Pos.	Neg	Unknown	Total
Immediate treatment	4	21	12	4	32	7	2	41
Up to 1 mo inclusive	8	23	11	0	31	10	1	42
1-2 mo	7	3	2	1	5	7	1	13
2-3 mo	4	6	2	3	10	5	0	15
3-4 mo	2	2	2	1	4	3	0	7
4-6 mo	1	2	1	1	3	1	1	5
6-12 mo	3	1	2	1	3	2	2	7
1-2 yr	1	1	2	0	1	2	1	4
2-8 yr	2	1	0	2	1	1	3	5
Home only Treated by private physician	2	3	1	1	3	3	1	7
Home only No treatment	0	2	2	0	3	1	0	4

duced to accept admission to one of those more available at the particular time. There is sometimes a difference of several months in the length of the waiting time for different hospitals.

An additional cause for delay in hospitalization in the group under consideration was the fact that a considerable number of patients refused hospitalization when diagnosis was made and remained at home for varying periods of time until they could be induced to accept sanatorium care or until their disease had advanced to a point making this imperative. Some of them had no treatment during this interim, a few were under the care of private physicians, and some made periodic visits to the clinic.

Summary of Treatment

After a case of pulmonary tuberculosis has finally been brought to light and definitive treatment has been initiated, many pitfalls remain because of the chronic nature of the disease, the tendency to relapses and remissions, and the protracted care necessary in the great majority of cases to justify hope of permanent cure. Economic considerations and the psychology of the patient, which in many cases renders him unwilling to undergo long hospitalization, add to the difficulty, and many persons leave institutions against advice after brief periods of treatment. Furthermore, it requires fine judgment based on much experience on the part of the attending physician to evaluate each case and to determine accurately, from physical, roentgenologic, and other observations, the status of the disease and the most appropriate treatment at any particular time. In conse-

quence, patients are frequently discharged from institutions before the disease is thoroughly arrested, only to be readmitted to the same or another institution at a later date.

The cases included in this series were of relatively recent origin, and the actual treatment period varied from a few months to several years, the average being approximately thirty-six months. The experiences of these persons, therefore, do not give a complete picture of the fate of the average tuberculous patient in New York. However, a summary of their experiences should be of interest. Eleven patients were never hospitalized. 4 of these refused all treatment, while 7 were under the care of a private physician or a clinic, at least for a time. Six of these persons are known to have spent from a short to a considerable length of time at home after diagnosis, with positive sputum.

Of the 139 patients institutionalized, 72 had one admission, while the others had readmissions as follows: 35 patients, two admissions, 13, three admissions, 15, four admissions, 2, five admissions, 2, six admissions, making a total of 263 admissions. Incidentally, direct transfers were made in 94 instances, making a total of 357 admissions to the hospitals and sanatoriums in which these persons were cared for. In some instances admissions, particularly to hospitals, were made for the purpose of carrying out surgical procedure or other measures that did not indicate prolonged hospitalization. The majority of readmissions, however, were incident to the fact that many persons who should have had long intensive treatment left prematurely when the disease was still

active, frequently with positive sputum. In most instances such action on the part of patients was against the advice of the physician, but in some cases it was with the consent of the latter and after a diagnosis of "arrested" or "apparently arrested" disease had been made. This is borne out clearly by the following tabulation showing the reason for discharge in each of the 263 admissions.

	Instances
Left against advice	77
Disease arrested or apparently arrested	47
After establishing pneumothorax or treatment of its complications	47
After thoracoplasty	6
For disorderly conduct	3
Information inconclusive	27
Died	10
Still in sanatoriums	48
Total	263

Periods Spent at Home and Away from Home After Diagnosis Was Made and the Status of the Sputum During These Periods

An exhaustive attempt was made to determine the status of the sputum of all patients included in the series from the time the diagnosis was made up to the completion of the study. This information was obtained through interrogation of the patients, especially through communication with hospitals and sanatoriums where they had been treated, and also by frequent examinations of concentrated specimens of sputum while the patients were under observation in the clinic or wards of the New York Hospital. The observations refer to a total period of 6,159 months or an average of three years and five months per case. Of these, 3,944 were spent at home and 2,215 away from home. The status of the sputum during these periods is given below.

STATUS OF SPUTUM FROM DATE OF DIAGNOSIS TO LAST REPORT*

	Un known	Nega tive	Posi tive	Alter nating
Months at home	739	1882	879	444
Months away	108	654	1133	320
Total	847	2536	2012	764

* Includes period from diagnosis to definitive treatment and actual treatment period.

It will be noted that the group spent a total of 879 months at home with "open" tuberculosis and in addition 444 months

with "alternating sputum," the latter representing periods where examinations intermittently revealed tubercle bacilli and no tubercle bacilli. A relatively small number of offenders were responsible for a large proportion of this time, for 39 persons who had positive or alternating sputum for over a year accounted for 639 of the 879 positive months and 431 of the 444 alternating months. On the other hand, 47 persons spent no time at home with positive sputum as far as their records indicate, and 64 others accounted for only 240 months at home with tubercle bacilli in the sputum and 13 with alternating sputum. At the termination of the study, 140 persons were still alive. 46 of these were at a sanatorium, 36 were home with positive sputum and 56 with negative sputum, and 2 were lost from observation.

Remarks

Great strides have been made in the city and state during recent years both in reducing the incidence of tuberculosis and in providing facilities for the comfort and efficient care of the sick through the earnest and well-directed efforts of those charged with the control and treatment of the disease. However, the foregoing observations suggest that much remains to be done, particularly toward expediting the diagnosis of the disease after the advent of symptoms, the initiation of more prompt definitive treatment, and the elimination of factors responsible for inadequate hospitalization. Early diagnosis, prompt hospitalization, and adequate treatment are all vital to the effective control of tuberculosis. However, among the group under consideration, only 37 cases were considered as well handled in all these respects, 22 others were poorly handled in all respects, while in the remaining 91 cases there were delays in either the diagnosis or the initiation of treatment, or there were shortcomings in the treatment itself.

It is believed that further efforts along educational lines—calling attention to the seriousness of any chronic symptoms such as mild cough and expectoration, slight,

unaccountable loss in weight, easy fatigue, anorexia, etc.—would be useful. Also it should be brought out that minimal disease is usually amenable to treatment while the advanced cases are often hopeless. Much stress has been laid upon the asymptomatic advanced cases with normal physical signs. Far more important, however, both clinically and epidemiologically, is the fact that many patients had definite symptoms which they disregarded for months and which in some cases the physician also disregarded when he was finally consulted. Prompt diagnosis would not only have shifted many of these cases from the advanced to the minimal group but would have eliminated them as sources of infection to others, and steps looking toward early diagnosis of cases with obvious symptoms would probably mean more, epidemiologically, than some case-finding measures in force at the present time.

As far as the physician is concerned, it is felt that a diagnosis of bronchitis or "cold" should never be made until the possibility of organic disease has been eliminated by physical and radiographic examinations. The diagnosis of pleurisy automatically demands an x-ray examination and follow-up. In many of the cases in this series an acute respiratory infection seemed definitely to mark the initiation of illness and was followed by mild increasing cough and general symptoms. The latter were disregarded, as the attending physicians had diagnosed "cold" or "grippe" primarily and had not made certain that this diagnosis was correct by a follow-up of the cases. A cough mixture purchased at a drug store or a prescription by a physician as a substitute for a careful physical examination and a radiograph made for delay in several cases, according to the records. It is obvious that a fuller utilization of the consultation and diagnostic clinics provided by the city is indicated. An increase in the bed capacity of tuberculosis institutions would obviate congestion and eliminate the need for the discharge of patients before their conditions warrant it. Much effort is often involved (1) in

persuading a person to break up his home for an indefinite period of time and go to a sanatorium, (2) in placing the children, and (3) in securing clothing for the patient and railroad fares to institutions situated at distant points. Premature discharge with consequent need for early readmission also involves much hazard to the patient and family, and in some cases it causes loss of confidence on the part of the patient, leading him to decline further help and to become a permanent "at home."

Summary and Conclusions

Among 150 cases of pulmonary tuberculosis recently observed in New York only 37 were appraised as well handled clinically and epidemiologically from the time symptoms developed throughout the course of the disease. In 91 cases there were avoidable delays in diagnosis or in the initiation of treatment, or definite shortcomings in the treatment itself, while in the 22 remaining cases there were shortcomings in all of these respects.

The diagnosis of pulmonary tuberculosis was made promptly after the initiation of symptoms in 57 per cent of the cases, there was from some to considerable delay—averaging from six to seven months per case—in 29 per cent, while in 14 per cent symptoms had been present for over one year up to several years before the patients sought medical care or at least before a diagnosis of tuberculosis was made.

Many persons with mild symptoms and even some with severe general symptoms failed to consult a physician or clinic for long periods of time, and frequently not until they were forced to do so because of chest pain, hemorrhage, or disability. The total avoidable delay attributable to the patients was 980 months in 150 cases.

Attending physicians contributed to the delay in instances where careful physical and radiographic examinations were not made, although the symptoms reported by the patients pointed to organic disease. Avoidable delay attributable to the physicians was 369 months in 150 cases.

Such delays in diagnosis have an important bearing on the control of tuberculosis, for only 22.7 per cent of the patients had cases of minimal extent when diagnosis was made and only 28.0 per cent had no tubercle bacilli in the sputum.

Numerous patients seen promptly after the advent of the symptoms, including a few found through contact examinations, had advanced disease and tubercle bacilli in the sputum when diagnosis was made, thus indicating the difficulty of locating early disease through the methods in vogue at present.

The value of contact examinations was demonstrated by the fact that 51.6 per cent of cases brought to light through this measure had minimal disease.

Attempts were made to hospitalize patients promptly after diagnosis, and in 83 cases, including those requiring emergency care, definitive treatment was initiated immediately or within one month after diagnosis. The remaining 67 patients required an aggregate of 572 months before treatment was instituted. The main reason for this delay was that a relatively small number of patients could not be convinced that they required hospitalization until they had become incapacitated. A contributing cause was the limited bed capacity of city institutions, making for long waiting lists.

At least 64 per cent of these patients had positive sputum when their cases were diagnosed, and this leads to the conclusion that delays in the initiation of treatment

and hospitalization constitute an obvious hazard.

Of the 139 persons who were institutionalized, 72 had one admission to a hospital or sanatorium and the remainder required readmissions on numerous occasions within a period of a few years. The total number of admissions and readmissions was 263, with additional direct transfers in 94 cases.

Readmissions were not only necessary because of reactivation of the disease in some cases but also frequently because patients left against advice (77 instances) or were discharged prematurely.

The observation period of the 150 cases was 6,159 months or an average of three years and five months per case. Of these, 3,944 months were spent at home and 2,215 at a hospital or sanatorium. In the total observation period the sputum of these patients contained tubercle bacilli constantly or alternately during 2,776 months. Of this time, they were in an institution for 1,453 months (52 per cent of the total period) and at home for 1,323 months (48 per cent of the positive period). Incidentally, these patients had positive sputum for 66 per cent of the entire period of the time spent in institutions and 34 per cent of time spent at home. The latter figure indicates the inadequacy of segregation of positive sputum cases. This unfavorable situation with regard to segregation is incident mainly to delays in initiating institutional care, premature discharges, and termination of hospitalization against advice.

PNEUMONIA CONTROL DIVISION PLANS PROGRAMS FOR FALL

The New York City Health Department has issued a reminder to those planning programs for medical meetings beginning next fall. The treatment of pneumonia is of special interest now that chemotherapy has proved of so much value. The Pneumonia Control Division is prepared to show an excellent motion picture prepared especially for physicians, and it will supply competent speakers, and interesting leaflets. Medical societies and hospital groups wishing to avail themselves of such services should communicate with Dr. William D. Sutcliffe, Pneumonia Control Division, William H. Park Laboratory, foot of East 15th Street, Manhattan.

AMERICAN CONGRESS OF PHYSICAL THERAPY

The nineteenth annual scientific and clinical session of the American Congress of Physical Therapy will be held September 2, 3, 4, 5, and 6, 1940, at the Hotel Statler in Cleveland, Ohio.

Numerous new features will be manifest in the 1940 program. While every phase of physical therapy will be covered in the general program, special emphasis will be laid on the use of physical measures in general practice.

For information concerning the seminar and preliminary program of the convention proper address American Congress of Physical Therapy, 30 North Michigan Avenue, Chicago.

THE ART OF LIP READING

Its Role in the Problems of the Hard of Hearing

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THE problems of the hard-of-hearing individual present many but definitely interrelated phases, each having not only its own importance but also exerting a definite influence upon the other phases and factors. Unique among these factors is the role played by the art of lip reading. Samuelson⁹ states that lip reading is thought grasping, that the individual does not have to see each element, each syllable, each word, and that, after sufficient practice and training, lip reading really becomes a subconscious effort. Experience shows that "hearing through the eyes" has been perhaps one of the most important factors in the adjustment of both children and adults with hearing impairment, regardless of the degree of hearing loss. Although there are natural lip readers, authorities agree that lip reading cannot be self-taught. Although we encounter exceptions to this rule, it is a well-established fact that the art of lip reading can best be acquired through scientific training.

One cannot, just with the stroke of the pen or by a word or two, prescribe lip reading for each and every patient. One must be prepared to cope with each individual as an individual, for many adults as well as children have a definite aversion to the study or even the thought of lip reading. Varied, indeed, have been our experiences in attempting to advise and urge the study of lip reading, this has been due to the "lack of parental cooperation or to unwarranted prejudice or advice."⁶ To some, the suggestion comes as a shock, to others, it seems to mean a stigma. One father even went so far as to rise suddenly from his chair, stamp his foot, and exclaim "What! My child

study lip reading—never!" Yet, this child, at the age of 5, has not learned to speak—mumbles but very poorly—so that even his parents have great difficulty in understanding him. As a playmate he is not sought after but is virtually repulsed, for his ability to understand the games and what is wanted is inadequate. The child is, therefore, unhappy and has become the subject of taunts and jibes by other children. Another case in point is that of a young woman, 35 years of age, who, although conscious of her marked hearing loss and the hopelessness of restoring the hearing, still refuses, after a period of two years of urging, to enroll in the lip-reading class.

Studies conducted among New York City school children in 1936 indicate that lip-reading instruction reduces by half the number of grades repeated by the average hard-of-hearing child.² There is no question that the child with hearing impairment exerts every faculty to keep up with his more fortunate classmates. One would expect mental strain and impaired physical and mental health, yet, the hard-of-hearing child measures up equally well, physically, with the normal-hearing child. It is only natural to conclude that there must be physical and mental strain, both of which can be reduced by lip reading.

In stimulating the hard-of-hearing patient to study lip reading, we attempt to circumvent the hearing defect by re-routing the aural stimuli through the optic pathways. Lip reading has been referred to as "an artificial but very useful aid."¹⁰ We fully agree with the "useful aid" but we disagree with the "artificial" of the foregoing quotation. Nature, in her providence, has bestowed upon children so-

called natural powers to learn, and this applies equally to lip reading as well as to academic subjects. Some children, and adults, too, have been designated as natural lip readers. Although perhaps not conscious of the hearing defect, instinctively the hard of hearing learn to read lips and thus enjoy normal social contacts. Similarly, do children progress educationally, without being conscious of a hearing handicap and without the discovery of the hearing defect by the teacher. In our experience we have had many cases of hearing impairment that were discovered only during the routine testing of school children. Clear visibility, good vision, and advantageous seating in the classroom are, of course, prerequisites. The importance of normal vision applies equally well to adults. This fact was brought home quite decidedly during one of our clinic sessions. A patient presented herself at the Hearing Conservation Clinic at the Brooklyn Eye and Ear Hospital and showed, after examination, an average loss of hearing of about 80 per cent. The patient made every attempt (natural) to read my lips during the course of conversation and examination, but it appeared to me that the patient had an impairment of vision because of the apparent difficulty manifested by the frequent shifting of her glasses. The patient was referred to the Eye Department and was given a new pair of glasses.

A completely rejuvenated individual presented herself at the next clinic session. On questioning as to any change in hearing, the patient's face brightened with a happy and cheerful expression as she stated that her hearing was very much better. Recalling, however, the hearing loss at the previous examination, I realized that no miracle had been performed (other than the new scientifically prescribed and properly fitted glasses). I lowered my voice to just about a whisper and varied the voice intensity and found that the voice intelligibility was good throughout our conversation. This experience brings out the extreme value and the unique position of the art of lip reading in the problems of the hard of hearing.

"The children of today are the fathers of tomorrow." This must always be borne in mind, and our quotation applies pertinently to the children with hearing impairment. Studies⁷ have shown that the inherent intelligence of the hard-of-hearing child is not below that of his normal-hearing companion. In many instances the hard-of-hearing child who is adept at lip reading far outdistances his normal-hearing classmates. Where the educational achievement is reduced and retardation becomes apparent, the institution and training in lip reading have definitely increased the educational achievement and reduced by half the retardation.^{2b} Thus has the art of lip reading been adopted and approved as perhaps the most important factor in contending with the educational loss of the child with a hearing defect.

The lip-reading classes have accomplished miracles by virtually equipping the hard-of-hearing child with a new mechanism, thereby permitting the hard-of-hearing child to remain and compete successfully with his normal-hearing companion in the public school classroom. Lip reading can, therefore, lessen mental strain and anxiety. Thus, too, has lip reading increased educational achievement and reduced retardation. When we speak of educational achievement in children we also imply the education and training of older boys and girls and men and women in fields suitable (after proper guidance) to their individual abilities, judged by the degree of hearing loss. In adults we have found the combination of a hearing aid and ability to lip read a more complete compensation for impaired hearing.¹⁰ We must not lose sight of the fact that because of hearing impairment many adults isolate themselves, they remain at home, they do not go about and visit, they avoid movies, theaters, parties, they become retiring and soon become hemmed in by a wall created and built by their hearing impairment. Our duty, therefore, is clearly outlined: we must make every effort, tactfully yet persistently, to instill in the hard-of-hearing patient the desire to study lip reading.

Given an average individual with a sense of cooperation and a desire to learn, we can, with lip reading, safely and sincerely prophesy the return of an individual to society

Sincere but poorly informed individuals, including otologists, are of the opinion that lip reading may be deferred until the hearing impairment becomes quite marked. This opinion is not borne out by experience, for it is more difficult not only to learn lip reading when the hearing impairment is severe but, because of the marked hearing defect, a poor speech pattern will also develop. We appreciate, too, although authors agree that there is no way of measuring, the strain and fatigue that attend hearing impairment. Not only is there auditory fatigue but there is also cerebral fatigue.¹¹ These factors can be readily determined during the course of testing. For example, a young lady, 19 years of age, presented herself for examination and advice as to her hearing impairment. In obtaining the history it became quite apparent that this patient had had a hearing impairment for many years—this, because of her poor speech pattern and of the characteristic attitude of leaning forward, her facial expression, and observing eyes. We learned that she had been advised about eight years previously to study lip reading but definitely refused purely on personal grounds. As the history continued, we also learned that the patient believed her hearing to be better at this time than it had been two to three years ago. As the story unfolded and as we varied our voice intensity and pitch—moving about the room during the questioning—we realized that the patient had, within the past several years, learned (naturally) to read lips, and thus we accounted for the subjective hearing improvement. With this subjective hearing improvement, we learned that the patient felt better physically and mentally. Thus do we attempt to bring out the fact that with the development of the natural ability to read lips this patient actually felt that she was hearing better. Therefore, with less expenditure of physical and mental effort,

the patient enjoyed a better physical and mental health. "When deafness is progressive and the patient has begun to make use of lip reading early in the course of the disease, adaptation takes place as deafness increases. Hearing and lip reading are combined in proportion to the patient's immediate needs, and he is, therefore, less aware of the advance which the disease makes."⁴ Studies made by Descoeudres⁵ to standardize a scale for the measurement of the language development of the child from 2-7 years of age show that the greatest gain in vocabulary is made between the second and third years. This brings out the importance and the great need for the early institution of lip reading and speech training. This can only be done when facilities are available for early detection, introduction of remedial measures, adequate follow-up, and adequate facilities for teaching. At this time, too, it is most propitious to begin speech training in order to develop a good speech pattern.

Fowler, of New York City, has often stated that the otologist must also be a psychologist if he is to contend successfully with the problems of the hard of hearing. We must emphasize this fact because of the individualization necessary in each case. As we progress in our work with the hard of hearing, we have learned to suggest that the patient with a hearing defect associate as often as possible with normal-hearing persons. If the patient has a hearing loss in the upper register, we tactfully suggest (preferably to the relatives) that the patient associate more with men than with women. Thus, in playing cards, checkers, chess, Mah Jong, and the like, interested friends and relatives virtually become lip reading instructors—because the individual with hearing impairment may be as close as two feet to the normal-hearing person, where voice intensity maintains a good average and the lips may easily be read. This method has been successfully employed and has served not only as a course in lip reading but also as a social and recreational activity. Patients, however, must be made to realize that normal-hearing persons also

have difficulty in understanding strangers, dialects, and those who speak indistinctly. In encouraging the patient we go further and state that it is not easy to lip read those who slur their words or whose speech is otherwise indistinct or inaudible.

Common politeness has dictated since early childhood (with urgings by parents and teachers) that "you look at people when you talk to them" or "you look at people when they talk to you." So with proper and natural stimulation all persons have learned to watch, observe, or at least look at the speaker. It is not difficult for any of us to agree that there have been many times when we would have missed the essence of a sentence or thought if we had not watched and taken in, visually, the associated lip movements and facial expressions of a speaker. Then, too, one instinctively learns to face the direction of the source of the sound in order to receive the full intensity of the sound projected. The head movements directed to the source of sound were originally voluntary and purposeful movements in infancy and childhood, but with the advent of years plus hearing experience the head movements have become subconscious, involuntary, or reflex movements in order to obtain the maximum advantage of binaural hearing.¹

The otologist as well as the social worker must make every effort to urge the study of the art of lip reading. Tactful yet determined must be these combined efforts in overcoming the hesitancy or objection on the part of the patient or family. Early detection, of course, is the keynote in coping with the problems of the hard of hearing. By the same token the study of lip reading must be begun before retardation occurs, before a child becomes nervous, fidgety, careless, noisy—yes—before the development of the "problem child." In adults, the surest means of avoiding perplexing or painful readjustment problems in cases of pro-

gressive deafness is the study of lip reading as soon as the hearing defect is discovered.^{5b} "The otologist who advocates early lip reading will not only serve his community by lessening human wastage but he will also receive the reward of incalculable gratitude."⁸

Conclusion

We concede the fact that little or nothing can be accomplished by the otologist in obtaining a cure in certain types of progressive or established hearing impairment. Lip reading is a powerful adjunct, as an adjustment factor, in coping with the problems that are presented by hearing impairment. Experience has clearly demonstrated the role played by the art of lip reading in contending with the problems of the hard of hearing. If retardation is to be reduced or eliminated, if adjustments are to be made, if training and guidance are to be evaluated, if social contacts are to be continued, the hard-of-hearing patient must avail himself of the art of lip reading, which is the first and most important step on the bridge that spans the chasm between unhappiness and failure on the one side and happiness and success on the other.

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ELECTROCARDIOGRAPHY

The Michael Reese Hospital, Cardiovascular Department, offers a full-time intensive course (two weeks) in electrocardiography, beginning August 19. Dr Louis N. Katz, director of

cardiovascular research, will give the course.

For further information address Michael Reese Hospital, Cardiovascular Department, 29th and Ellis Ave., Chicago, Illinois

THE DIFFERENTIAL DIAGNOSIS OF MEDIASTINAL TUMOR AND AORTIC ANEURYSM

Value of Contrast Cardiovascular Visualization

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THE diagnosis of aneurysm of the aorta when an expansile pulsation may either be seen or felt is relatively easy to make. However, when the aneurysm lies deep in the mediastinum in intimate association with other mediastinal structures, producing cough, bronchostenosis, and pulmonary suppuration, this pulsation may be completely hidden. Even when the aneurysm is in plain view and its wall contains laminated clot, the pulsation may be feeble or even absent. Pulsation transmitted to a tumor mass adjacent to the aorta may further complicate the picture, making it difficult to decide whether the mass is vascular or nonvascular. Correct diagnosis of such intrathoracic lesions is exceedingly important since the treatment of these disorders is entirely different. For aortic aneurysm the best treatment now is wiring,¹ whereas it is generally agreed that primary thoracic tumors without demonstrable metastases and not radiosensitive had better be excised.² Even with the aid of roentgenkymography it is not always possible to decide whether the pulsations are expansile or transmitted or whether there is an aneurysm when its wall is clotted.^{3,4}

Because of this difficulty in differentiation of mediastinal masses, visualization of the aorta by aortic puncture has at times been performed to establish the diagnosis.⁵ Direct puncture, however, is no longer necessary because visualization of the heart and of the thoracic blood vessels can now be effected by intravenous

injection of radiopaque compounds.^{6,7} The following case reports illustrate the value of the latter method in the differentiation of aortic aneurysm and mediastinal tumor.

Case Reports

Case 1 Mediastinal and Hilar Metastatic Carcinoma—P Y, aged 47, American housewife, was referred for study by the Department of Radiation Therapy of Bellevue Hospital. A radical excision of the left breast was done three years previously, following which she received a course of radiotherapy. She remained symptom free until six months prior to admission when "choking sensations" caused her to come to Bellevue Hospital where she was found to have enlarged hilar and mediastinal shadows and an apparent widening of the supracardiac shadow. The conventional roentgenogram (Fig 1) seemed quite typical of metastatic involvement of the lymph nodes in the mediastinum and the right hilum, and this impression was confirmed by cardiovascular visualization. In Figs 2 and 3 the differences between the vascular system and adjacent nonvascular masses are strikingly brought out. It is evident that the cardiovascular system is normal except for the deformities of the innominate vein and the superior vena cava caused by the masses of enlarged lymph nodes which practically surround these vessels, and for the displacement of the aorta to the left.

Case 2—Aortic Aneurysm and Obstructive Emphysema—T A, aged 47, colored laborer, was referred from a New York City department of health clinic for diagnosis. Following cardiovascular visualization, he was admitted to the Tuberculosis Service of Bellevue Hospital for further study. The patient's chief complaints were "difficulty in swallowing solid food" and "wheezing in the throat." At 17 years of age he had a chancre and had received no antisyphilitic treatment except for five intravenous injections

This investigation was aided by a grant from the Department of Medical Research of the Winthrop Chemical Co. Inc.

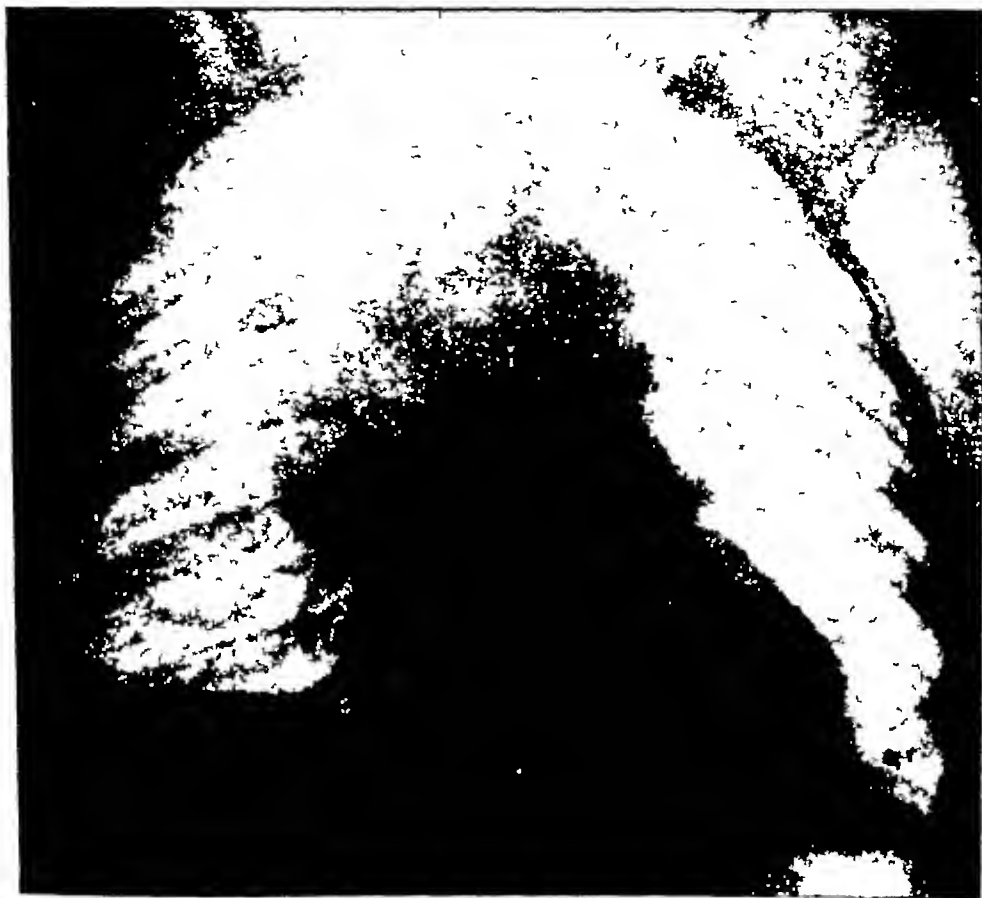


FIG 1 CASE 1 Mediastinal and Hilar Metastatic Carcinoma Conventional Roentgenogram Note large rounded hilar and mediastinal masses on right side, widened supracardiac shadow, and two calcified tubercles at left base also increased illumination of left base due to amputation of breast

after the Wassermann test was found to be positive three years ago. The difficulty in swallowing was first noted fourteen years prior to entry and consisted of a sensation as though solid food were stuck in the throat above the sternum. He received no medical care for this complaint, which gradually subsided and in recent years had not been severe. He also became aware of a wheeze in the left side of the chest, which was spontaneously relieved but which reappeared six years ago and had become progressively worse since then. During the past month or two the dyspnea and coughing had become very pronounced. Expectoration, hemoptysis, and weight loss were denied.

Examination revealed a well-developed and well-nourished colored man who was only slightly dyspneic. The pupils reacted normally to light and in accommodation. There was a tracheal tug and lagging of the left side of the thorax dur-

ing respiration, the breath sounds were markedly diminished over the entire left side, and there was inspiratory and expiratory wheezing present over both lungs. The heart was not enlarged, and the heart sounds were normal save for the accentuation and tambour quality of the second aortic sound. There were no abnormal pulsations or murmurs. The systolic blood pressure was 120, the diastolic, 80. Fluoroscopic examination showed that the cardiac silhouette was normal while the supracardiac shadow was widened chiefly at the right upper border. The pulsation in this region, later verified by roentgenkymography, was extremely faint. There was also obstructive emphysema on the left side of the thorax, indicated by the hyperventilation of this side, the low position of the diaphragm, and the mediastinal displacement toward the right side with expiration. These cardiovascular and pulmonary changes are clearly shown in the conven-



FIG 2 CASE 1 Mediastinal and Hilar Metastatic Carcinoma Contrast Roentgenogram Right innominate vein with tributaries, superior vena cava, right atrium, right ventricle, pulmonary artery, main branches, and hilar subdivisions opacified Note inverted S-shaped deformities of innominate vein and superior vena cava caused by metastases

In these illustrations, IV indicates innominate vein, SVC, superior vena cava, RA, right atrium, RV, right ventricle, PA, pulmonary artery, RPA, right pulmonary artery, LPA, left pulmonary artery, PV, pulmonary vein, LA, left atrium, LV, left ventricle, AO, aorta, IA, innominate artery, CA, common carotid artery, SA, subclavian artery, AN, aneurysm, TUM, tumor

tional roentgenogram (Fig 4) The esophagus was displaced posteriorly and to the right at the level of the supracardiac widening and contained a traction diverticulum near its midpoint In the lateral and left oblique roentgenograms, not reproduced here, there was a marked deviation of the trachea posteriorly and elevation and stenosis of the left bronchus Except for a positive blood Wassermann test, the laboratory examinations were negative

Because of these observations, aneurysm of the aorta seemed to be the probable diagnosis, and this clinical impression was confirmed by cardiovascular visualization (Fig 5) The aneurysm

was shown to be saccular in type and to arise from the junction of the ascending and transverse portions of the aorta Further contrast studies in the oblique and lateral views, not included in this report, confirmed these observations and demonstrated convincingly that the elevation and compression of the left main bronchus was caused by this aneurysm

Case 3 Aortic Aneurysm, Bronchostenosis, and Pulmonary Suppuration—B M, aged 51, laborer, was admitted to the Psychopathic Service of Bellevue Hospital because of acute and chronic alcoholism He had no complaints, probably because his mental confusion precluded the



FIG 3 CASE 1 Mediastinal and Hilar Metastatic Carcinoma Contrast Roentgenogram Pulmonary veins, left atrium, and ventricle, aorta, and branches at arch visualized. Note that aorta can be distinguished from adjacent mediastinal structures and that aortic arch, not metastases, causes rounded shadow at upper left border of mediastinum. Aortic arch displaced toward left and widened. Arrow indicates aortic wall.

securing of an adequate history. However, because a "brassy cough" and wheeze were noted he was sent for frontal and lateral roentgenograms of the chest that revealed the presence of a large rounded mass in the left upper chest posteriorly. In these views the shape and location of the mass strongly suggested a neurofibroma, while in the left oblique view taken later it resembled an aortic aneurysm. No pulsation of the mass, however, could be detected by fluoroscopy. There was marked deformity of the left main bronchus and suppurative pneumonitis distal to it. In order to determine directly whether aneurysm or neoplasm was present, the heart and the aorta were visualized (Fig 7), and a huge sacular aneurysm was demonstrated. The

presence of a huge clot almost obliterating the aneurysmal sac was strongly suggested by the absence of pulsation, the increased density of the lateral portion of the aneurysm in the conventional film, and its relatively poor filling with diodrast.

Case 4 Primary Mediastinal Neoplasm—A housewife, aged 43, was referred by Dr Arthur H. Blakemore in order to determine whether a large posterior mediastinal mass (Fig 8) was vascular or neoplastic. Previous investigations, including conventional roentgenograms in various positions, esophograms, roentgenokymograms, and punch biopsy, had yielded inconclusive results. The blood Wassermann test was negative. Radiotherapy had also been tried

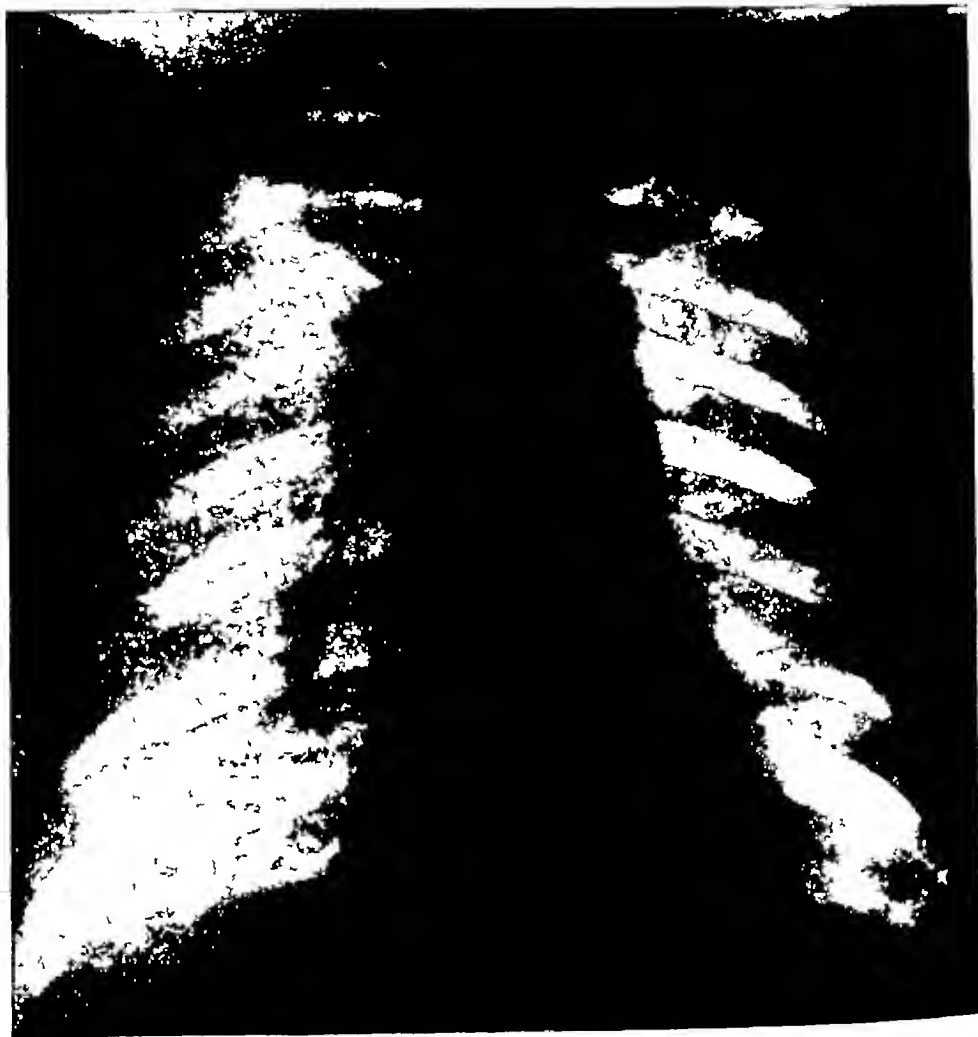


FIG 4 CASE 2 Aortic Aneurysm Conventional Roentgenogram Note dense rounded mass at right border of mediastinum, also increased illumination of left lung due to obstructive emphysema

without demonstrable effect. Because the mass continued to enlarge, it seemed imperative to determine its nature so that appropriate treatment might be given.

Our studies definitely ruled out aneurysm of the pulmonary artery, for this vessel and its branches were normal (Fig 9). The aorta, too, appeared normal in caliber throughout its course, but the descending aorta was displaced slightly to the right (Figs 10 and 11). Saccular aneurysm of the aorta, however, could not be ruled out with certainty, for it was not known whether a saccular aneurysm with a pin-point connection with the aortic lumen, which would prevent the entrance of diodrast, would give this picture. The presence of a normal aorta and the neoplastic nature

of the mass were subsequently established, however, by surgical excision and pathologic study which indicated that the tumor was a sarcoma primary in the mediastinum.³

Comment

The differential diagnosis of mediastinal masses is notoriously difficult. In this crowded region the lungs, the cardiovascular, the tracheobronchial, and other structures are so closely grouped together that clear definition of structure is always difficult and usually impossible by ordinary roentgen-ray examination. Now, however, by visualizing the great arteries



FIG 5 CASE 2 Aortic Aneurysm Contrast Roentgenogram Left ventricle, aorta, and aneurysm outlined Note opacified saccular aneurysm arising from ascending aorta and displacing innominate vein and superior vena cava which are still opaque

and veins and the cardiac chambers which collectively lie in, or reach into, practically every part of the mediastinum, it is possible to distinguish the vascular from the nonvascular elements. Intrinsic gross abnormality of the vascular system can then be recognized directly, while other types of mediastinal disorders such as neoplasm can be distinguished or more clearly defined by the effect they exert upon the adjacent blood vessels and the heart.

The 4 cases presented here were selected because they illustrate more or less satisfactorily the value of cardiovascular visualization in the differentiation of tumor and aneurysm in two frequently involved locations, namely, the right and left sides of the mediastinum. While it is true that the nature of the disorder seemed quite obvious in the first 3 cases, actually there was uncertainty regarding the diagnosis after the conventional examination except in the first instance.



FIG 6 CASE 3 Aortic Aneurysm Conventional Roentgenogram—Frontal Position Note huge rounded mass occupying almost entire upper half of left side of thorax Cavities in left lower lung field due to suppurative pneumonitis secondary to bronchostenosis

The conventional roentgenograms in the first 2 cases (Figs 1 and 4) grossly resembled each other and exhibited widening of the supracardiac shadow, rounded prominence of the right upper border of the mediastinum, and increased illumination of the left lung field. The mediastinal deformity in the first instance was due to metastatic carcinoma in the superior and middle portions of the mediastinum, which pushed the superior vena cava and the right innominate vein to the right and the aorta to the left (Figs 2 and 3). Except for displacement, these vessels were normal. The increased pulmonary radiance here was only apparent, being due to the absence of the left breast which had been amputated for carcinoma three years previously. On the other hand, in the second case (Figs 3-4) the pathologic picture was produced entirely by aortic disease. The prominence of the supracardiac shadow on the left side was due to widening of the aortic arch from "uncoiling," while the right-sided projection was caused by a saccular aneurysm arising from the ascending and probably the transverse portions of the aorta. The

relatively slight pulsation of the aneurysm in the frontal view was doubtless due to the masking effect of the innominate vein and the superior vena cava which encircled it. It is of interest that the aneurysm also extended posteriorly and to the left, forcing the esophagus backward and to the right and causing elevation, posterior displacement, and compression of the left main bronchus. The degree of bronchostenosis seemed only moderate in the lateral film (not reproduced here), but it apparently caused the obstructive emphysema,⁹ although the exact mechanism is not clear. In this case the increased radiance of the left lung was real, being due to the presence of emphysema.

There was also striking similarity between the roentgenographic pictures presented by the last 2 cases (Figs 6-11). The unidentified masses in each instance were rounded and occupied the left side of the posterior mediastinum and the adjacent lung field in the frontal view (Figs 6 and 8). In the left oblique view, controls not included here, the masses overlay the spine at a region ordinarily traversed by the aorta. In neither case did the mass pulsate, nor could it be determined with certainty before opacification whether it was aneurysm or tumor. The aneurysm of the descending aorta (Fig 7) presented unusual difficulty in visualization because the huge sac was apparently filled almost completely with clotted blood which prevented adequate filling with diodrast. The same difficulty has been encountered in attempting to visualize ventricular aneurysms which are frequently filled with clot.⁷ In Case 3 the partial opacification of the aneurysm was worth while, for it clearly revealed the beginning of the aortic dilation and also the irregular unclotted pathway through the aneurysm—both facts contributing to the diagnosis. Interest in the last case centers around the diagnostic riddle presented by it and the lessons learned from it regarding the interpretation of contrast films. Although all the conventional methods of investigation including punch biopsy and radiation treatment were employed, the diagnosis was completely un-

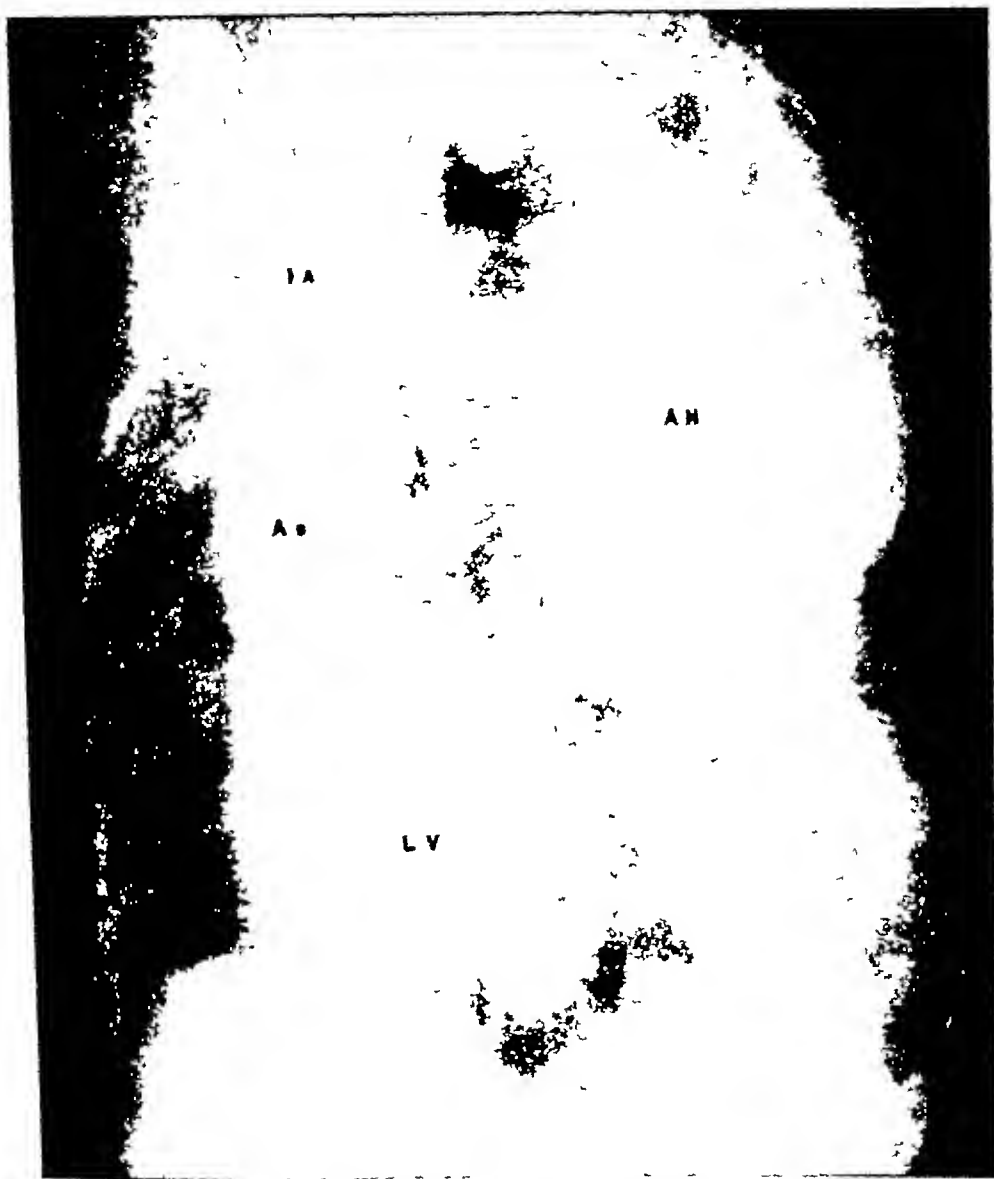


FIG 7 CASE 3 Aortic Aneurysm Contrast Roentgenogram—Left Anterior Oblique Position Left ventricle, aorta, and aneurysm opacified Arrow indicates aortic wall and beginning of aneurysm

known, and even after visualization it remained in doubt until settled by operation. After visualization we suspected that the mass was a tumor of some type rather than an aneurysm, but the suggestive shape and location of the mass, the possibility of saccular aneurysm with a minute connection with the aorta which could not be disproved, and our inexperience

with contrast roentgenograms of the aorta made decision impossible. Now, however, in retrospect, we believe the diagnosis could probably have been safely made on the following grounds: (1) the absence of irregularity or dilation of the lumen of the aorta such as one would expect to find with a saccular aneurysm, (2) the absence of widening of the aortic



wall at the upper pole of the mass (Fig 7), and (3) the displacement of the descending aorta far to the right by the mass (Figs 10 and 11)

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FIG 8 CASE 4 Mediastinal Tumor Conventional Roentgenogram—Frontal Position. Huge rounded mass extends into left lung field.



FIG 9 CASE 4 Mediastinal Tumor Contrast Roentgenogram—Frontal Position. Right atrium, right ventricle, pulmonary artery, and subdivisions opacified. Pulmonary artery and branches normal excluding aneurysm of these vessels.



FIG 10 CASE 4 Mediastinal Tumor Contrast Roentgenogram—Frontal Position Left ventricle and aorta opacified Note lack of filling of mass.



FIG 11 CASE 4 Mediastinal Tumor Contrast Roentgenogram—Left Oblique Position. Left ventricle and aorta visualized. No opacification of mass Note normal contour of aorta making presence of aneurysm unlikely.

THE TREATMENT OF MENOPAUSAL HYPERTHYROIDISM WITH ESTROGENIC SUBSTANCE*

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THE exact relationship between the thyroid and ovaries is not known. Since the anterior lobe of the hypophysis is the "motor" for both these glands, it seems possible that the variations in gonadotropic hormone production may extend to the thyrotropic hormone. However, it has not been definitely shown that the thyroid undergoes cyclic changes with the ovaries. Hitchcock and Wardwell⁸ reviewed the literature on this subject and, because of the contradictory data reported, undertook a study on a group of normal women in which the basal metabolic rate was determined frequently on each subject throughout the cycle. They found that about two-thirds of the women showed a metabolic rate somewhat lower than normal during menstrual bleeding, following a marked premenstrual rise. The only other definite change was a low point about midway between periods (ovulation?). These workers suggest that the basal metabolic rate varies inversely with the quantity of ovarian hormone in the blood. The suggestion is pertinent in view of the fact that most investigators have reported a definite rise in blood and urinary estrins around the time of ovulation and a suggestive fall just before the onset of bleeding. On the other hand, Aron³ has observed a parallel excretion of gonadotropic and thyrotropic hormones under normal and pathologic conditions.

On one point, however, there is general agreement: hyperthyroidism is often associated with marked ovarian changes—puberty, during the menstrual period, and pregnancy. Moreover, the weight-changes occurring at the menopause often have, as a basis, a thyroid dysfunction.

Engelhorn⁷ observed an increase in the weight of the thyroid following castration. Bokelmann and Scheringer⁴ confirmed this but could not correlate the gain in weight with an increase in function, for there occurred an extensive colloid degeneration. Andersen and Kennedy⁵ noted histologic changes that led them to believe that castration results in a thyroid *hypofunction*.

Whatever the effect of castration on the thyroid, we believe it is most probably due to changes in the function of the pituitary, which is profoundly affected by gonadal failure. Loeser¹⁵ observed a greater amount of thyrotropic hormone in the pituitaries of castrates than in the glands of intact animals. Aron's work³ has already been mentioned. The latter two observations make it seem possible that the hyperthyroidism sometimes first arising at the menopause is the result of excess production of thyrotropic hormone.

The following cases were treated with large doses of estrogenic hormone, namely, progynon B. The administration of the hormone was over a short period of time (except in Case 8). The total dosage (with the same exception) ranged between 500,000 and 750,000 international units. The basal metabolic rate on all patients (except Case 7) was determined not less than twenty-four hours after the patient had entered the hospital.

Case 1—G. F., aged 43, housewife, entered March 21, 1935, complaining of a choking sensation in the throat. Six years previous to her admission, the patient began to feel "nervous and jumpy" and suffered from a "lump in the throat." She received sedatives and improved for a period of two years. Two years later (i.e., four years after the first appearance of symptoms) a hysterectomy was performed because of large fibromyomas. Her menstrual history had been completely normal until the operation (age

* A preliminary report of this paper was delivered at an address to the Clinical Society of the Bronx Hospital on October 11, 1937. The patients treated were on the wards of the Bronx Hospital.

40), since when she has had a complete amenorrhea. Following the operation she developed bilateral exophthalmos, progressive in nature. She felt very weak but lost no weight. Her condition remained unchanged until October 1, 1934, when she awoke one night with a severe diarrhea. A private physician prescribed powders for her "goiter condition." He reported a basal metabolic rate of +66 per cent at that time. She remained in bed for three months and gained weight, but during this time she felt weak, nervous, upset, dizzy, nauseous, and warm. Her hair grayed. Ever since the operation she had suffered from "flushes" and complained of occasional "skipped beat" of the heart.

Physical Examination Examination revealed a well-developed and well-nourished white woman, not acutely ill, with bilateral exophthalmos. Von Graefe's sign was positive. The thyroid was definitely palpable, and there was increased retromanubrial dullness. The heart was enlarged to the left and downward. She had mixed coarse and fine tremor of the fingers.

Laboratory Findings Observations were essentially negative except for an occasional moderate proteinuria. The first basal metabolic rate was +8 per cent and another a week later +11 per cent.

Diagnosis Despite the normal basal metabolic rate, a diagnosis of Grave's disease was maintained.

Course The patient was kept in bed and given 11 cc of progynon B (550,000 international units) between March 30 and April 12, 1935.

The result was a marked reduction in exophthalmos and a decided general improvement objectively and subjectively. She was given four more injections of progynon B between April 25 and May 1, 1935, but this was discontinued when the exophthalmos began to return rapidly. She was discharged May 7, 1935, in excellent condition. She has been well to date with no treatment.

In this case, a rapid regression of the exophthalmos occurred with the injection of progynon B. This would imply an effect of estradiol on the orbital muscles of Mueller and/or the retrobulbar tissues, either direct or indirect. In this connection the observation of Marine and Rosen,¹⁷ that exophthalmos can be produced in rabbits with thyrotropic hormone, is significant. The same workers,¹⁸ however, failed to effect existing exophthalmos in rabbits by giving estrin.

Case 2—A G, aged 44, housewife, entered on April 7, 1935, complaining of loss of voice for the past three days and difficulty in swallowing for the same length of time. A hysterectomy had been performed sixteen years previous to admission. She had had exophthalmos for the past twelve years with no other symptoms referable to the thyroid. During the past year she had lost 30 pounds and had become increasingly nervous. Two weeks before entering the hospital she had caught cold. A few days later her thyroid became larger, and she began to run a temperature up to 104 F at night, and to complain of pains in the sides of the neck. With the use of an ice collar, the size of the thyroid was reduced, but this was followed by a sense of substernal oppression (the family physician states she was fibrillating). For the past three days she had become progressively hoarse. On admission she could hardly whisper and had difficulty swallowing even fluids.

Physical Examination Examination revealed an old, emaciated acutely ill female. The submaxillary glands were enlarged and tender, the right more so than the left. The throat was diffusely injected and very dry. Laryngoscopy revealed paralysis of the left vocal cord. Moderate exophthalmos was present with a positive von Graefe's sign. The thyroid was just palpable. The heart showed a slight outward enlargement, regular sinus rhythm, and a soft systolic murmur at the apex, not transmitted. The trachea was moderately deviated to the right, and the lungs showed coarse moist rales at both bases. There was slight pretibial edema of both legs.

Laboratory Findings Observations were normal except for a moderate leukocytosis with a shift to the left.

Diagnosis The diagnosis was exophthalmic goiter with thyroid crisis and paralysis of the left vocal cord.

Course The patient was placed on a fluid diet with barbiturates. On April 16, 1935, her basal metabolic rate was +36 per cent. On April 23, following a week of rest and sedation and a high caloric diet, her basal metabolic rate was +40 per cent. From April 23 until May 5 she received a total of 500,000 international units of progynon B. On May 7 her basal metabolic rate was +32 per cent. From May 10 to May 20 she received no medication whatsoever. On May 21 her basal metabolic rate was +32 per cent. She was then Lugolized from May 21 to May 24. On May 27 her basal metabolic rate was +26 per cent. On May 28 a subtotal thyroidectomy was performed. On May 29 she was digitalized, her pulse dropped

from 160 to within normal limits, and she was kept on a maintenance dose of digitalis and Lugol's solution. She improved steadily. On June 5 her basal metabolic rate was +4 per cent. She was discharged well June 9, 1935.

Case 5—M. B., aged 32, housewife, entered on February 1, 1937, following a severe upper respiratory infection during which her temperature rose to 104 F. She had been in this hospital from May 2 to October 13, 1935, during which time a hemithyroidectomy had been performed for severe Grave's disease, following Lugolization. At her present admission she complained of respiratory embarrassment, some edema of the ankles, and nervousness, all of which had been present almost continuously from her discharge. She had lost 20 pounds since her operation. Her menstrual periods were regular, and she was bleeding at the time of admission.

Physical Examination Examination revealed moderate dyspnea and orthopnea, a staring expression with slight exophthalmos. The remaining lobe of the thyroid was diffusely enlarged and moved with deglutition. Her heart, lungs, and abdomen were negative. The extremities showed several small ecchymotic areas, not traumatic in origin.

Laboratory Findings Observations were essentially normal.

Course The patient's basal metabolic rate was around +70 per cent on repeated occasions. From March 23 to March 30, 1937, she was given 250,000 international units of progynon B. At the end of this time her basal metabolic rate was +76 per cent, and she felt somewhat worse. The patient was then Lugolized, and her basal metabolic rate came down to +40 per cent. The remainder of her thyroid was removed. She improved markedly and was discharged in fairly good condition.

The results of treatment in these 2 cases we believe to be highly significant. Both were failures. In the former, the patient had had a hysterectomy performed sixteen years previous to admission. For the past twelve years she had had exophthalmos with moderate nervousness, and it was only during the previous year (twelve years after onset of exophthalmos) that she began to show symptoms definitely attributable to a thyroid dysfunction. In other words, there is no reason to believe that her hyperthyroidism had its onset with loss of

ovarian function. In Case 5, the patient was a young woman having apparently normal gonadal function, and here the progynon B had no beneficial effect whatsoever. Apparently there is a difference between Grave's disease and menopausal hyperthyroidism, the latter possibly involving no dysfunction of the thyroid itself but only of the pituitary.

Case 3—G. W., aged 52, housewife, entered May 22, 1935, complaining of severe pain in the left lower extremity. Her menstrual history was perfectly normal except for the past few months, when her periods began to become irregular in interval and duration. In 1933 a suspension of the uterus had been performed. During November, 1933, she began to notice tremor of the hands. There were no other symptoms until three months ago when she began to be troubled with palpitation of the heart and became very nervous. About that time she had an attack of extreme shortness of breath. About six weeks previous to admission she experienced a severe lancinating pain of the left foot radiating upward and laterally to the left hip. She had also suffered repeated seizures of nocturnal paroxysmal dyspnea.

Physical Examination Examination revealed an extremely nervous white female complaining bitterly of pain in the left lower extremity. Her skin was moist and warm. There was a moderate degree of exophthalmos present. The thyroid was neither visibly nor palpably enlarged. The heart showed moderate outward enlargement, totally irregular rhythm, and no murmurs were made out. The lungs were clear. Examination of the legs showed the typical observations of a left sciatic neuritis.

Laboratory Findings Observations were completely normal. X-ray of the chest revealed no evidence of substernal thyroid.

Diagnosis The diagnosis was Grave's disease with auricular fibrillation and left sciatic neuritis.

Course On May 24, 1935, basal metabolic rate was +57 per cent. She was given progynon B for eleven days, a total of 550,000 international units. On the day of the last injection she became markedly psychotic, and another basal metabolic rate could not be taken. She was discharged on June 22, 1935, the final note reading "Patient discharged today. Her fibrillation has remitted, and aside from a psychosis which is rapidly clearing up, she shows marked improvement." She remained well until January, 1937, when the symptoms of hyperthyroid

* This case was reported with the kind permission of Dr. Abraham O. Wilensky.

ism began to return. On the outside she was given several injections of estrogenic substance and again became psychotic. This cleared up, and she has felt well and has remained well to date.

This case might be interpreted as signifying a relationship between progynon therapy and ensuing psychotic states, yet estrone has been found of value in menopausal involutional psychoses. It is a well-known fact that some women experience an increase in nervous tension and emotional instability premenstrually. Whether this can be attributed to increased estrin in the blood is doubtful, for most workers have noticed a fall in blood estrin at this time. On the other hand, Case 7 showed a definite decrease in her mental excitement following the use of estrogenic hormone. There is need for thorough study in this field before any sound inference can be drawn concerning these facts.

Case 4—R S., aged 47, white housewife, entered on July 16, 1935, complaining of nervousness and exophthalmos of nine months' duration, hypertension for four years and palpitation of the heart for one and one-half years. The entire subjective complex dated back to the death of her husband two years previously. She had not menstruated for the past two years.

Physical Examination Examination revealed a nervous woman with moist warm skin and exophthalmos with a positive von Graefe's sign. Her heart was enlarged outward and downward, and there was a systolic murmur at the apex. There was also a tremor of the hands.

Laboratory Findings Nothing of note was revealed.

Diagnosis The diagnosis was hyperthyroidism (menopausal).

Course On July 19, 1935, her basal metabolic rate was +56 per cent. From July 20 to July 31 she received 600,000 international units of progynon B. Her basal metabolic rate dropped to +25 per cent, although she remained ambulatory throughout. She had gained four pounds in weight. She was then put to bed and treated with phenobarbital and put on a high caloric diet. On August 13 her basal metabolic rate was +40 per cent. She had developed an acute follicular tonsillitis at this time. Her tonsils were removed. When she recovered from the operation on August 21 her basal

metabolic rate was +25 per cent. No further treatment was given, and on September 17 her basal metabolic rate was +36 per cent. On July 17, 1937, she returned to the hospital with marked hyperthyroidism, and a thyroidectomy was performed.

Case 6—F M., aged 52, housewife, entered on February 28, 1937, complaining of chills, fever, pain in the back, vomiting, anorexia, and loss of weight. Her menses had ceased abruptly nine months previous to admission. She gave a history of frequency and urgency of urination with some dysuria.

Physical Examination Examination revealed an acutely ill, emaciated woman with a staring expression. The heart and lungs were normal, but she showed a bilateral Murphy sign. The thyroid was palpable, and there was a tremor of the hands.

Diagnosis The diagnosis was (1) pyelonephritis and (2) hyperthyroidism.

Course On March 2 her basal metabolic rate was +73 per cent. She was given complete freedom of the wards and received a total of 300,000 international units of progynon B in twelve days. At the end of this series of injections, her basal metabolic rate was +40 per cent. She abruptly left the hospital against the advice of the attending physician, and we have had no word of her since.

Case 7—J L., aged 62, housewife, entered on November 21, 1937, complaining of weakness, loss of interest in her surroundings, and pruritus vulvae and perianal. She had stopped menstruating twelve years previous to admission. At the time of her menopause she discovered that she had diabetes mellitus. She had taken 15 units of insulin a day. For the past month she had had no insulin. She felt weak and very depressed.

Physical Examination Examination revealed a thin, fidgety, restless woman with a staring expression but no exophthalmos. There was no visible thyroid. Heart and lungs were negative.

Laboratory Findings Besides a blood sugar of 206 mg on admission, the observations were normal.

Diagnosis The diagnosis was diabetes mellitus.

Course The patient kept brooding and complained that she could not sleep. On November 26 she threatened to jump out of the window. She was given phenobarbital and sodium amylal. Beginning November 27 she was given progynon B 50,000 international units a dose for five doses (total 250,000 international units). On December 2 her urine was sugar-

from 160 to within normal limits, and she was kept on a maintenance dose of digitalis and Lugol's solution. She improved steadily. On June 5 her basal metabolic rate was +4 per cent. She was discharged well June 9 1935.

*Case 5**—M B., aged 32, housewife, entered on February 1, 1937, following a severe upper respiratory infection during which her temperature rose to 104 F. She had been in this hospital from May 2 to October 13, 1935, during which time a hemithyroidectomy had been performed for severe Grave's disease, following Lugolization. At her present admission she complained of respiratory embarrassment, some edema of the ankles, and nervousness, all of which had been present almost continuously from her discharge. She had lost 20 pounds since her operation. Her menstrual periods were regular, and she was bleeding at the time of admission.

Physical Examination Examination revealed moderate dyspnea and orthopnea, a staring expression with slight exophthalmos. The remaining lobe of the thyroid was diffusely enlarged and moved with deglutition. Her heart, lungs, and abdomen were negative. The extremities showed several small ecchymotic areas, not traumatic in origin.

Laboratory Findings Observations were essentially normal.

Course The patient's basal metabolic rate was around +70 per cent on repeated occasions. From March 23 to March 30, 1937, she was given 250,000 international units of progynon B. At the end of this time her basal metabolic rate was +76 per cent, and she felt somewhat worse. The patient was then Lugolized, and her basal metabolic rate came down to +40 per cent. The remainder of her thyroid was removed. She improved markedly and was discharged in fairly good condition.

The results of treatment in these 2 cases we believe to be highly significant. Both were failures. In the former, the patient had had a hysterectomy performed sixteen years previous to admission. For the past twelve years she had had exophthalmos with moderate nervousness, and it was only during the previous year (twelve years after onset of exophthalmos) that she began to show symptoms definitely attributable to a thyroid dysfunction. In other words, there is no reason to believe that her hyperthyroidism had its onset with loss of

ovarian function. In Case 5, the patient was a young woman having apparently normal gonadal function, and here the progynon B had no beneficial effect whatsoever. Apparently there is a difference between Grave's disease and menopausal hyperthyroidism, the latter possibly involving no dysfunction of the thyroid itself but only of the pituitary.

Case 3—G W., aged 52 housewife, entered May 22, 1935, complaining of severe pain in the left lower extremity. Her menstrual history was perfectly normal except for the past few months when her periods began to become irregular in interval and duration. In 1933 a suspension of the uterus had been performed. During November, 1933, she began to notice tremor of the hands. There were no other symptoms until three months ago when she began to be troubled with palpitation of the heart and became very nervous. About that time she had an attack of extreme shortness of breath. About six weeks previous to admission she experienced a severe lancinating pain of the left foot radiating upward and laterally to the left hip. She had also suffered repeated seizures of nocturnal paroxysmal dyspnea.

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ministration of the same substance De Amilibia and his co-workers⁶ observed that *small doses* of folliculin had a definite thyrotropic action. Zain²⁸ was able to inhibit the effect of induced hyperthyroidism in castrate rats by injecting large doses of progynon B. Collett, Smith, and Wertenberger⁵ produced an increase in the basal metabolic rate of hysterectomized and ovariectomized women showing a moderate hyperthyroidism. The largest dose given at a time was 1,000 international units and the largest total dosage 18,000 international units. We believe this is confirmation of the work of de Amilibia, *et al*.⁶

Whether or not hyperthyroidism will occur at the menopause, we believe, depends not only on the extent of thyrotropic hormone production but also on the reactivity of the thyroid itself. The importance of this point cannot be too strongly emphasized. Uhlenhuth²⁴ has shown that, whereas epinephrine alone will not stimulate (histologically) the salamander thyroid, epinephrine in combination with pituitary "thyroactivator" will have a greater effect than a similar amount of "thyroactivator" injected alone. Sehart²¹ noted a marked improvement in many of the symptoms of menopause, especially the flushes, following the administration of duodotyrosine. Loeser¹⁸ studied the effect of duodotyrosine on the thyroid of castrated guinea-pigs. He observed a morphologic hyperfunction of the gland following castration. Thus he ascribed to an increase in the thyrotropic function of the anterior lobe of the hypophysis. The oral administration of duodotyrosine was followed by regression of the hyperthyroidism. He concluded that duodotyrosine suppresses the secretory activity of the anterior lobe of the pituitary.

Starr and Patton²² investigated the effect of antuitrin S and small doses of theelin on hyperthyroidism. They noted remission of the disease coincident with treatment. In the earliest successful cases the remission had continued for eighteen months, and in the others no recurrence had been observed to the time

the report was submitted. The women in whom the treatment was successful were all below the menopause age and had no history of ovarian disease. The failures included 1 boy, 2 women at or past the menopause, and 1 woman who had had one ovary removed previously. Evidently the induction of remission with pregnancy urine extract is dependent on normal ovarian function.

(Several workers have observed an antagonism between thyroxin and estrin. Van Horn²⁵ and Reiss and Pereny¹⁹ both found that it required much more estrin to produce estrus in spayed rats with induced hyperthyroidism than in those castrates to whom no thyroid had been given. Adler-Monnich¹ reported that the effect of follicle-stimulating hormone on the ovaries and uterus is greater when injected alone than when administered with thyroxin. These observations seem to indicate a direct inhibition of estrone action by the thyroid, but many more experiments must be performed before any conclusions may safely be drawn.)

Summary

1 Eight cases of hyperthyroidism in women were treated with large doses of progynon B.

2 Of these patients, 5 were assumed to be cases of hyperthyroidism arising with the climacteric.

3 Of the 5 patients, all showed improvement (1, Case 6, left the hospital against advice after her basal metabolic rate had dropped from +73 to +40 per cent in ten days under progynon B therapy. There was 1 recurrence, Case 4).

4 The other 3 patients have been well to date.

5 If Case 7 is a menopause case, it is one of the uncommon instances of the "menopause syndrome" persisting for many years—in this case twelve years. The results of treatment were favorable.

Conclusion

Some cases of hyperthyroidism occurring at the menopause can be successfully

free. Her mental status was constantly improving. From December 9 on, she was given oral estrogenic therapy. On December 12 she was discharged well. She was seen privately by one of us (A. G.). On January 27, 1938, a basal metabolic rate was taken and found to be +32 per cent. She was given 500,000 international units of progynon B between that day and February 26. Her basal metabolic rate on March 2 was +18 per cent. She felt well, and her urine was sugar-free. On April 6 her basal metabolic rate was -2 per cent. She has remained well to date.

This patient had stopped menstruating twelve years previous to admission. It is doubtful, therefore, that she was suffering from the effects of ovarian failure, although it is possible for the so-called "menopause syndrome" to continue for many years. The diabetes mellitus began at the time her menses ceased. The fact that she responded favorably to progynon B makes us inclined to believe that here was an element of her hyperthyroidism due to gonadal failure.

*Case 8**—A. L., aged 43, white seamstress, entered on June 7, 1938, complaining of a loss of 30 pounds in four months. She had become very nervous, had insomnia, profuse sweating, with a tremor of the hands. A year previous to admission she had had a bilateral oophorectomy performed.

Physical Examination. Examination revealed a highly nervous woman, sweating, with a staring expression. She had a tremor of the hands and a palpable thyroid but no exophthalmos.

Laboratory Findings. Observations showed nothing remarkable except for a moderate anemia.

Diagnosis. The diagnosis was hyperthyroidism (menopausal).

Course. On June 9, 1938, her basal metabolic rate was +52 per cent. On June 21 her basal metabolic rate was +65 per cent. She was put on progynon therapy, receiving a total of 600,000 international units in twelve days. On June 27 her basal metabolic rate was +49 per cent. On July 5 it was +45 per cent. She was discharged to the outpatient department and injected twice a week with 50,000 international units of progynon B. On August 15 her basal

metabolic rate was +31 per cent, and on September 4, 1938, it was +15 per cent. The patient has resumed all her duties and feels quite well.

Discussion

The evaluation of results in the medical treatment of hyperthyroidism is difficult. Patients occasionally show spontaneous remission in symptoms. Often bed rest and sedative are sufficient to produce some relief. What impressed us in this series was the rapidity with which some cases of menopausal hyperthyroidism responded to this treatment. When therapy was effective there were both general symptomatic improvement and a diminution in the basic metabolic rate.

As to the *modus operandi* of progynon B on menopausal hyperthyroidism, the following explanation is offered. Large doses of estrone are known to decrease the gonadotropic activity of the anterior lobe of the hypophysis. This suppression may extend to the thyrotropic hormone, probably produced by the same cell. There is evidence to indicate that large doses of estrogenic substance have an inhibitory effect on the thyroid.

Igura⁹ observed an increase in vesicular epithelium of the thyroid following the administration of ovarian extracts. Kubosono¹² and Krockert¹¹ both confirmed this by using placental extracts and follicular hormone, respectively. Kunde, *et al.*,¹³ demonstrated a slight lowering of the basal metabolic rate in dogs injected with a maximum of 200 rat units a day of estrone. Other workers^{22, 14} succeeded in lowering the basal metabolic rate of rats and rabbits with estrogenic substance. Savage and his co-workers²² were especially successful in rabbits with induced hyperthyroidism and in spayed rats. Karp and Kostkiewicz¹⁰ found that prolonged administration of estrogenic hormone was followed by degenerative changes in the rat thyroid. Sanchez-Calvo²⁰ noted stimulation of the thyroid, after short term injections of estrin, and degeneration of the gland, after continued ad-

* We are grateful to Dr. Jacob Clahr for his kind cooperation in treating this patient in the outpatient department.

CLINICAL EXPERIENCES WITH GOLD SALTS IN THE TREATMENT OF RHEUMATOID ARTHRITIS

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(From the Arthritis Clinics of the Brooklyn and St. Mary's Hospitals)

IT HAS been said that two diametrically opposed views hold true regarding the therapeutic value of gold salts in the treatment of rheumatoid arthritis. On the Continent gold has the reputation of being the most valuable therapeutic agent known in the treatment of this affliction. In America gold therapy has either received very little attention or been viewed with indifference. This likewise holds true in the treatment of tuberculosis, in which condition auriotherapy was first introduced. The difference of opinion cannot entirely be ascribed to toxicity, since the drug is equally toxic in both geographic areas, but perhaps to a more conservative attitude on the part of American investigators. However desirable an attitude of skepticism may be, one is, nevertheless, forced to the realization that the treatment of rheumatoid arthritis continues to be one of the major problems in therapeutics and that any agent that presumes to hold forth as much promise as does gold should be worthy of wide and unbiased investigation.

Following the studies abroad of Forestier and other investigators, a clinical group in the Brooklyn Hospital interested in arthritis had the opportunity of employing gold for clinical trial. The water-soluble salt of gold sodium thiomalate, equal in all respects to various other water-soluble products used in France and England, was employed.

The investigation was carried out by Drs McKenna, Anderson, Lamb, Velardi, and myself. The series comprised 52 patients treated between February, 1935, and April, 1936, a period of fourteen months. Twenty-five of the patients were treated in the arthritis clinic. The remainder were treated by the orthopedic department or were seen privately, the

same routine being consistently followed.

A course of treatment comprised three series each aggregating 2.2 Gm of the salt. Gold was administered at weekly intervals. An interval of six weeks was interposed between the second and the third series. The sedimentation rate was used as a laboratory index of control of the disease. The average reading before treatment was 41.8 mm in one hour, this gradually fell throughout the months of therapy to a normal of 10 mm or less per hour.

It was felt at this time that although Forestier¹ had given due warning regarding the toxicity of the drug he had failed to emphasize the frequency and violence of reactions that might occur.

Of the 52 patients treated, due to intolerance or allergic phenomena, more than 50 per cent developed toxic manifestations, necessitating cessation of therapy. In contrast, 25 patients who evidenced a tolerance demonstrated startling clinical improvement. These patients had a cessation of pain after four to six injections and demonstrated definite improvement in the entire arthritic picture. Improvement was manifested by increase of function and decrease in periarticular thickening at the end of the first series. Even among the improved patients, toxic manifestations were not uncommon, often necessitating interruption of treatment for short periods. Although transient albuminuria was frequently noted, no cases of true nephritis developed.

In one instance, a mild hepatitis associated with jaundice occurred.

There was no incidence of purpura, but 2 cases of severe epistaxis were recorded. There were 2 instances of severe gastroenteritis associated with temperature ranging from 103 to 104 F. Six or

treated with large doses of estrogenic hormone *

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* Note Since the preparation of this report we have begun to use testosterone propionate instead of estradiol benzoate with very promising results

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SCHOOL PHYSICIANS HOLD CONFERENCE AND ELECT OFFICERS

The New York State Association of School Physicians held its annual conference at Saratoga Springs, New York, June 24 Besides routine business and election of officers, the scientific session was the main feature of the occasion The school health exhibit was one of the finest

The scientific session was as follows: presidential address, Dr L A Van Kleeck Manhasset, "How a School Nurse-Teacher Spends Her Time," Mary T Fay, R N, president, New York State School Nurse-Teachers' Association, Garden City, "The Physical Examination of School Personnel," Dr E H Ormsey, Amsterdam (Discussion Dr William Ayling, Syracuse), "The Laboratory Studies on an Intensive Follow-up of High School Athletes," Dr L S Preston, Oneida (Discussion Dr C A Greenleaf, Olean, and Dr C S Wallace, Ithaca), "Sex Education and the Schools," Dr Daniel J Kelly, Superintendent of Schools, Binghamton (Discussion Dr William F Snow, American Social Hygiene Association, Dr Richard W Weiser, Public Health Federation, Cincinnati, Dr William F Mitchell, Syracuse, Dr Herbert W Cummings, State Department of Health,

Albany, Dr Maurice A Bigelow, Professor of Biology and Director of the Institute of Practical Science Research, Teachers College, Columbia University, New York City)

Dr William Ayling, Health Director of the Syracuse school system was elected president and succeeded Dr Louis A Van Kleeck, of Manhasset The other officers are Dr Edgar Bieber, of Dunkirk, vice president, and Dr C Adele Brown, of Oswego, secretary-treasurer

The program committee for the ensuing year consists of Dr Cyrus H Maxwell, of the State Education Department, Albany (chairman), Dr Dean F Smiley, of Cornell University, Ithaca, and Dr Harold H Mitchell, of New York City Department of Health

On the Publicity Committee are Dr Michael Levitan, Rome (chairman), Dr C A Greenleaf, Olean, and Dr Cyrus H Maxwell, Albany

Resolution 1 emphasizes the importance of and favors an annual examination of all school personnel

Resolution 2 supports the principles pertaining to medical care during a national emergency as adopted by the American Medical Association

A VISOR TO PREVENT WAR INJURIES OF THE EYE

At the annual congress of the British Ophthalmological Society, Sir Richard Cruise demonstrated a visor which he invented for attachment to the steel helmet worn by soldiers By a single movement it can be brought down over the upper part of the face and similarly can be retracted within the helmet The mesh is so fine that exceedingly small missiles are prevented from entering the eye, while at the same time vision is only slightly limited. Cruise has found that fragmentation from explosives is the primary cause of war blindness In the last war the majority of ocular injuries were due to small metal fragments penetrating the eye Cruise believes

that well over half the cases of blindness in the last war would have been prevented by the visor, which consists of 22 gage duralumin, molded so as to fit the inner curvatures of the steel helmet, to which it is attached by rivets A spring adjustment enables it to be kept within the helmet

The congress unanimously passed a resolution as reported in the J A M A, that this visor would prevent the majority of cases of blindness caused by gunshot wounds, and repeated its recommendation, made in 1917, during the last war, that some such visor should be adopted The resolution was sent to the Admiralty, the War Office, and the Home Office

has a cumulative action and since, therefore, it is the total amount given rather than the individual dose which ultimately determines the therapeutic effect, the amount of the individual dose is perhaps only important insofar as it may tend to reduce the incidence of toxic reactions. With this fact in mind there was no hesitancy, whenever expedient, to reduce the weekly dosage to 0.025 Gm. As in our first clinical study, a course of treatment comprised three series. Here, however, each series was reduced from 2.2 to 1 Gm. If deemed necessary, a fourth or even a fifth series was given.

In heavy metal poisoning such as mercurial poisoning there is a distribution of the metal through all the tissues of the body.³ Since gold is a heavy metal, we may be permitted to assume that the same distribution occurs with its use. Furthermore, if the analogy is accepted, it is the intimate action of gold on the cellular structure of the body that renders it efficacious in some patients, toxic in others. Experiments on animals corroborate this view. The work of Hulst⁴ lies in this direction. Hulst reports the occurrence of basophilic granulation in the erythrocytes following gold treatment. Recent observation seems to indicate that this granulation is a regenerative process. Hulst is under the impression that this change in the red cells is initiated by gold salts. He also notes that many cases of gold poisoning are accompanied or preceded by an increase in the number of eosinophilic leukocytes. This increase subsides again as the signs of intoxication disappear.

Value of Supportive Therapy

The studies of Sande,⁵ Piesocki,⁶ and Dainow,⁷ in which favorable results with vitamin C in cases of intolerance to arsphenamine and gold salts were noted, induced the writer to adopt the use of this vitamin. After the injection of 100 to 200 mg of vitamin C intravenously, Sande found that petechiae, bloody sputum, and urobilinogenuria disappeared. In a number of patients

exhibiting signs of gold intoxication, a synthetic crystalline vitamin C was given intravenously in doses of 2 cc with good results. One such patient, showing intolerance following a very small amount of the drug, developed a dermatitis exfoliativa and, as a consequence, gold salts were discontinued. Subsequent to this reaction, the patient exhibited marked improvement, the sedimentation rate dropping from 100 to 14 mm. Treatment was subsequently continued with injections of sulfur intravenously. Improvement continued in a most satisfactory manner for about eight months, at which time the patient suffered a reinfection of the frontal sinuses with a return of her erstwhile complaints. There was justifiable hesitation in resuming therapy with gold salts, but, in view of the patient's resistance to other forms of treatment, gold therapy was very cautiously reinstituted in doses of 0.025 Gm, supplementing these injections with 2 cc of cevitic acid intravenously. Although the patient is still undergoing treatment, no toxic effects have been noted, notwithstanding the fact that the total dose to date has exceeded the amount previously given. The dramatic therapeutic response, following signs of intolerance as illustrated in this patient, has also been noted by other investigators and seems to point toward the stimulation of some basic therapeutic mechanism such as is probably found in jaundice, as reported by Hench.⁸

The importance of constitutional therapy in rheumatoid arthritis has been frequently emphasized by various investigators. It would seem that any adjunct therapy that would serve the purpose of increasing general health would be of value. Thus the action of calcium in diminishing inflammatory changes, its sedative properties, and its value in allergic states have been recognized. In this group it has been administered as calcium gluconate in doses of 1 drachm, two times a day, on an empty stomach. To further enhance its utilization, vitamin D was given in the form of viosterol, 15 drops daily. The desensitizing prop-

8 patients reported experiencing a similar syndrome in milder form, and 6 developed corneal ulcers. Three patients developed exfoliative dermatitis. Milder forms of dermatitis as well as stomatitis and glossitis were frequently encountered.

One death occurred. This patient, a female, aged 59, with a history of rheumatoid arthritis of six years' duration, had received six injections of 0.05 Gm each. After a total dose of 0.30 Gm of the salt, she developed mental confusion, delusions, excitation, stupor, coma, followed by death. The various departments concurred in the opinion that the condition was one of toxic psychosis with encephalomalacia and that death was probably due to cerebral thrombosis. The heavy metal was held to be responsible for the fatal issue.

The results of this series of cases were published by Dr Donald McKenna.² McKenna concluded that the dosages advised by Forestier were generally not tolerated by the patients in this series and that even in small doses the drug is very toxic. It was his opinion that allergic or toxic symptoms can develop so suddenly and with such small aggregate dosage as to make this type of therapy definitely hazardous, that in its present form, gold is not a safe therapeutic agent to place in the hands of the medical profession, that the percentage of patients who can tolerate the drug is too small to warrant subjecting the average early arthritis patient (in whom it allegedly does the most good) to the risk that it entailed, and that there was no evidence in Forestier's large series of 550 cases, or in the small series of 52 cases, to assume that gold therapy is curative.

However, McKenna finally concluded that if a patient is tolerant of the drug it is more likely to produce rapid symptomatic improvement, often a dramatic quiescence. Remissions, when established, are more sustained than by the orthodox methods now in use in this country.

As a result of the foregoing conclusions formal group study of gold salts was

discontinued in the arthritis clinic of the Brooklyn Hospital.

Several of the workers were loath, in spite of toxicity, to relinquish completely a therapeutic agent that, in some respects when tolerated, was superior to most known agents. I have, therefore, resumed investigation.

It was my hope that we might in some manner avoid the severely toxic manifestations, deriving the good so frequently to be found. Since gold has a cumulative action, it was felt that this might be accomplished in the following manner: (1) by diminishing the dose very substantially, thus decreasing the toxic response, (2) by increasing the patient's resistance to the drug by supportive therapy, (3) by watching carefully for the first symptoms of intolerance.

Decreasing Toxic Reactions

When we initiated the use of gold salts, we started with 0.025 Gm of the drug, gradually increasing the dose until, after five or six injections, the patient was receiving 0.1 Gm at intervals of seven days. Despite the fact that this was still a comparatively small dose, we found that the greater number of severe reactions were encountered with this amount. The dose was, therefore, established at 0.05 Gm every seven days. In some instances this amount was divided into two separate injections of 0.025 Gm and given with an interval of three days between each injection. It was found that most patients not only tolerated this reduced dosage but showed a satisfactory therapeutic response. Whenever there was a delay in the response we increased the metal to 0.05 Gm given in one injection for a number of weeks. In this manner it was found that the patient could receive more consistent treatment without frequent interruptions because of reactions. The theory that gold acts as a catalyst and that, clinically, equally good results may be obtained with small as with large doses, supports this rationale of reduced dosage. Another point in favor of smaller doses is that since gold

type may represent a terminal stage with ankylosis and gross deformities

According to this classification, it is seen that the most responsive patients would fall under types I and II. Out of a total of 22 cases, 12 or 54.5 per cent showed great improvement. Of these 12 cases, 1 fell under type I, 2 under type II, 6 under type III, and the remainder under type IV.

TABLE 1—TYPE OF ARTHRITIS AND GRADE OF IMPROVEMENT

Case No.	None	Slight	Moderate	Marked	Great
1					IV
2	II				
3		IV			
4				II	
5		III to IV			
6	III		IV		
7		II			
8					III
9					IV
10					IV
11					
12		III			
13					I
14					II
15					III
16	IV				
17					III
18	IV				
19					III
20					III
21					II
22					III

I believe that these results are a good index of the efficacy of gold salts not only in the early and less severe forms of arthritis, which are naturally most responsive to treatment, but also in the more advanced or severe forms, which present the greatest problem. The incidence of toxicity was 36.6 per cent. Of 22 cases, 8 gave evidence, in some form or other, of a toxic reaction. Among these were 4 cases of dermatitis exfoliativa. In 1 there was a drop in the platelet count to 120,000. Another patient developed an eczematous eruption. In another, there was a localized, maculate rash, which disappeared with temporary interruption of treatment. One case developed an intense, generalized scarlatiniform dermatitis. This disappeared in a few weeks and with the exception of occasional attacks of vertigo permitted continuation of therapy. About six weeks after the last injection, however, this patient met with a cerebral accident followed by sudden exodus.

Whether, as in the other death encountered in the first series, her demise was related to treatment with gold salts is open to discussion. Dosages in this case never exceeded 0.025 Gm. It is possible, however, to have a delayed reaction to gold salts. In justification of this form of therapy, a spontaneous death was noted in 1 previous instance where gold salts had not been used.

Action of Gold Salts in Arthritis

The work of Kime¹⁰ in tuberculosis casts considerable light on the action of gold in influencing disease. This investigator has been able to prove that, following the administration of gold chloride, the leukocytes become sensitized and therefore intensely phagocytic, engulfing vast numbers of tubercle bacilli. These bacilli had been ingested after the use of gold chloride in $\frac{1}{10}$ -gram doses, intramuscularly, at intervals of two weeks. In contrast to ordinary specimens of sputums, a fairly large number of phagocytes contained from 5 to 20 tubercle bacilli each. Kime also emphasizes the fact that these same observations may be brought out in any case of open tuberculosis by the use of gold and are not found except after the use of this metal.

Before Kime, Koch was able to show that gold hindered the development of tuberculosis, while Schroder¹¹ ascertained that this metal is capable of promoting cicatrization of the foci in tuberculous disease, especially in tuberculosis of the throat.

This mechanism, i.e., the intensely phagocytic activity of the polymorphonuclear cells followed by conversion of the tubercle bacillus into an intracellular organism similar to the coccus of pneumonia or gonorrhea, might, it seems, be adopted to explain the action of gold salts in rheumatoid arthritis, which, as tuberculosis, is conceded to have an infectious etiologic background. Whether the beneficial results in rheumatoid arthritis are due to the ingestion of an offending streptococcus by a phagocyte or merely the by-product of phagocytic

erty of the calcium-ion and its depressant action on the nervous system seem to have beneficial systemic effects in rheumatoid arthritis as is evidenced by an increased sense of well-being as well as increase in weight and appetite. In addition, following the practice of Forester, in order to lessen the incidence of toxicity, liver concentrate was injected intramuscularly or administered per os.

Early Signs of Intolerance

A recognition of the early signs of intolerance, followed by interruption of treatment, is a very important consideration for success with gold therapy. According to my experience, and that of others, it is felt that perhaps one of the earliest signs of intolerance is generalized itching. Frequently an urticarial or scarlatiniform rash may make its appearance after several injections. Continuation of therapy in such cases may lead to more serious skin manifestations, such as dermatitis exfoliativa. Vertigo has also proved to be a premonitory sign of a more serious disturbance and should be heeded when manifest. Another condition which may develop rapidly is stomatitis. The so-called "grippe aurique" may also arise within a few hours of the first injection.

Results

The results of this study are as follows: 22 selected cases of rheumatoid arthritis were treated from 1936 to 1939. Among these 22 were 5 patients with Marie-Strumpell type of arthritis who were treated privately. These patients were in an age group of from 25 to 66 years. The duration of the disease varied from one to eighteen years, and all had failed to respond to other forms of therapy. The period of observation ranged from three months to two and one-half years. As in the preceding clinical study, changes in weight, blood pressure, urine, and blood were charted.

In a number of individuals, in spite of a satisfactory therapeutic response, treatment had to be discontinued temporarily

or permanently because of a marked drop in the leukocyte or platelet count.

In evaluating results, and therefore the efficacy of the agent used, I attempted to avoid the pitfalls so frequently encountered in evaluating any therapeutic agent in arthritis. I realized that many unsubstantiated claims have been made for the efficacy of various therapeutic agents in the treatment of this disease. Because of the essential nature of arthritis, characterized by varying degrees of involvement and by periods of spontaneous remissions, the difficulties of estimating the inherent worth of any particular form of therapy are manifold.

Regarding the therapeutic efficacy of any agent, there must be a parallelism between the degree of organic involvement and the evaluation of the response of the disease to the agent used before any form of therapy can accurately be judged. This principle has been adopted in diseases of the heart, where patients are classified in various groups according to the grade of disability present and their relative responses to particular forms of therapy compared. Prognosis follows a set grouping.

Adopting a similar plan, each case treated was classified according to (1) structures involved, (2) function, (3) sedimentation rate, (4) x-ray observations, and (5) prognosis.

I later found that Taylor⁹ had preceded me in publishing such a plan for the classification of persons suffering from arthritis. My classification, essentially the same as Taylor's, is as follows:

Type I Joint changes mostly periarticular, "soft-tissue" in nature. Patient ambulant. Sedimentation rate moderately rapid. Changes on x-ray slight or nondemonstrable. Prognosis good.

Type II Pathology involves joint proper. Ambulation difficult or variable. Sedimentation rate very rapid. Changes on x-ray present. Prognosis still good or fair.

Type III Joint changes more advanced. Presence of deformities. Ambulation difficult or impossible. Sedimentation rate very rapid or moderately so. X-ray observations more extensive. Prognosis doubtful.

Type IV Marked and extensive pathology. Patient nonambulant. Sedimentation rate rapid or may be normal if condition inactive. X-ray observations marked. Prognosis poor. This

rent from using the drug in the severer forms of arthritis that have proved refractory to other types of therapy

6 The results obtained must be considered in terms of the severity of the disease. The 12 cases out of 22 that showed a great improvement represented, in good part, well-advanced grades of arthritis

7 It is my belief, particularly in the severe forms, that the seriousness of the disease and the intense suffering and disability it causes justify the cautious use of gold by the experienced practitioner

8 Finally, it is hoped that a less toxic substitute may soon be found that will incorporate all the beneficial proper-

ties of gold salts without their toxic effects

31 Monroe Place

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PREVENTION OF IVY POISONING

Protection against ivy poisoning is possible by use of an alkaline vanishing cream containing sodium perborate or potassium periodate according to a report by the U S Public Health Service published in July

This protective ointment consists of 10 per cent sodium perborate in a vanishing cream which is to be rubbed into the skin of the arms and face of workers before exposure to poison ivy. The vanishing cream fills the pores and forms a protective covering and prevents much of the poison from penetrating the skin. As the perspiration comes in contact with the vanishing cream in the pores of the skin, a soap is formed and the alkalinity of the soap tends to neutralize the poison ivy in addition to washing it off and out of the skin

This vanishing cream should be freshly prepared at least once in two weeks to avoid de-

terioration according to the medical director of the Office of Dermatoses Investigations. The cream used in the experiments was slightly discolored but still active after one month

In the case of persons working where they might come in contact with poison ivy, the protective cream should be applied in the morning and allowed to remain on until the noon hour when it should be removed by washing with soap and water, this will emulsify the vanishing cream in the pores of the skin and wash away whatever poison may be in pores or on the skin

The cream should be reapplied again after the lunch hour and again washed off in the evening when work is over

These findings are based on results with a limited number of voluntary workers. Extensive field trials are in progress and will be reported later

RADIUM STORED IN A CAVE

The transference of radium to a cave in the Derbyshire hills was among one of the war measures taken by the Christie Hospital and Holt Radium Institute whose annual meeting took place in Manchester England recently

The annual report stated that the board was informed that anything approaching a direct hit where radium was present would make the immediate neighborhood uninhabitable so the radium store was lowered into a shaft dug 50 ft deep in the hospital grounds. Later it became necessary to provide special protection in a nonvulnerable area for the reception and treatment of patients by radium. A board member loaned his country house for the duration of the war and patients from a wide area are

now able to have radium treatment in safety. To extend still further the radium treatment, the radium in solution was transferred to a deep subterranean cave in the Derbyshire hills where a laboratory was fitted up and equipped. Considerable difficulties had to be overcome in the establishment of the 'Radon Cave,' since it entailed setting up an electrical generating plant in addition to the installation of the radon plant itself involving the transport by hand of all the necessary materials and of some two tons of lead for the protection of the personnel. The radon after purification is collected in tiny capillary tubes of gold, silver and glass and used for the treatment of cancer in Manchester without any risk in the case of a direct hit by a bomb

TABLE 2—THERAPEUTIC CHART

Case No	Duration in Years	Classification	Total Amount of Gold Salts in Gm	Improvement				Period of Observation	Reaction	Age	
				None	Slight	Moderate	Marked				Great
1	10	IV	1 7					*	3 yr	Der exfol	36
2	1	II	0 1	*					1 1/2 mo	None	46
3	5	IV	0 3		*				2 1/2 mo	None	66
4	8	II	0 8				*		1 yr	Intense scar eryth	44
5	5	III (M S)	0 2		*				2 mo	None	26
6	6	III	0 425		*				1 1/2 yr	None	30
7	6	IV	1 7			*			1 1/2 yr	Nooe	50
8	5 1/2	II	0 125		*				1 1/2 mo	None	31
9	7	III	2 5					*	2 yr	None	32
10	6	IV	2 0					*	15 mo	Mild rash	39
11	6	III	0 1					*	3 yr	Der exfol	63
12	18	III	0 6		*				8 mo	Der exfol	38
13	5	II	0 7					*	1 yr	Nooe	38
14	3	III	0 25					*	3 mo	None	40
15	5	III	0 175					*	1 yr	Slight der exfol	44
16	3	IV	1 0	*					1 yr	Slight eczema	48
17	3	III (M S)	2 0					*	1 yr	None	25
18	5	IV (M S)	0 8	*					8 mo	None	26
19	2	III (M S)	1 8					*	14 mo	Dim. platelet count	29
20	3	III	3 5					*	2 yr	Nooe	85
21	2	I	1 2					*	1 yr	Nooe	29
22	4	I	2 5					*	2 yr	None	32

stimulation is difficult to say. However, like so many other therapeutic measures that have shown gratifying results in chronic disease, its action is apparently nonspecific in nature.

The importance of the reticuloendothelial system in bringing about immunization has also been investigated. Schlossberger has shown that the histiocytes of the connective tissue, as well as other cells of the body, are influenced by chemical substances. According to Schroder, the storage of gold in the reticuloendothelial system causes an activation of this system with a resulting long range action on disease and its pathology.

Furthermore, experiments on rabbits have shown that gold is stored in the connective tissue of the spleen, in the Kupffer cells of the liver, and in the lungs. Gold has also been found in the blood serum and in the lymph.

Finally, the apparent desensitizing action of gold, as evidenced by results obtained in asthma,¹² psoriasis,¹³ and other allergic phenomena, is of importance. Its action in rheumatoid arthritis might be explained on this basis.

Résumé

1 Fifty-two cases of rheumatoid arthritis were treated at the Brooklyn Hospital with gold salts in the form of

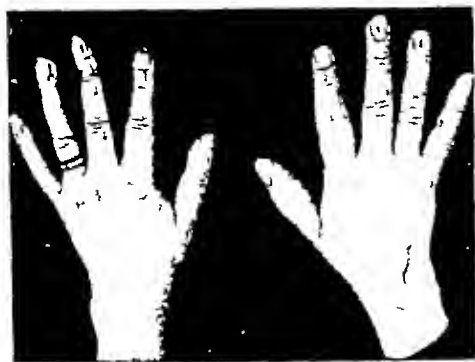
gold sodium thiomalate. Three series of injections were given, each series comprising 2.2 Gm of the drug. An average dose of 0.1 Gm per week was employed.

2 Of these 52, those able to tolerate the drug showed startling clinical improvement. Toxic manifestations developed in more than 50 per cent.

3 A second and independent clinical study to determine a means of reducing toxicity was resumed in the Arthritis Clinic of the St. Mary's Hospital. This study included 22 cases, 5 of which comprised infectious spondylitis of the Marie-Strumpell type. Of these 22 cases, 12, or 54.5 per cent, showed great improvement. The toxic incidence was reduced to 36.6 per cent by reducing the dosage and administering additional agents. The toxic reactions incurred were, in part, less severe and allowed continuation of treatment.

4 It is my opinion that gold salts is, at present, one of the most valuable therapeutic agents known in the treatment of rheumatoid arthritis. It is, unquestionably, a very toxic drug, but it may, however, be used with brilliant results by diminishing the dose and administering additional agents to reduce toxicity. The possibility of serious reactions must always be kept in mind.

5 This toxicity should be no deter-



without accompanying blood or pus. A check-up four weeks later showed them almost entirely healed. A complete gastrointestinal study three weeks after admission showed only a marked diminution in the caliber of the distal half of the large bowel with excessive motility. The rugal markings were distorted, and the walls of the colon were somewhat thickened and irregular. Laboratory examinations showed a normal sedimentation rate (2 mm per hour) and negative urinalysis and blood Kline. Blood chemistry was urea nitrogen, 11.7 and 21.6 mg per hundred cubic centimeters, nonprotein-nitrogen, 39.7 mg, total serum proteins, 5.25, albumin, 3.52, globulin, 1.73, A/G ratio, 2.04, carbon dioxide combining power, 52.6, volumes percentage, phenolsulthalein 32.2 per cent. The blood count on February 28, 1939, was normal. On March 23 the blood count was: r b c 3,700,000, Hb 62 per cent, w b c 13,800. The blood sulfanilamide concentration was (10.6)/(10.3)(9.9). X-ray of chest and examination of the sputum was negative for acid-fast infection. Examination of the contents of the sigmoid aspirated from the region of the ulcers on March 18 was negative for pathogenic organisms. The next day, however, a pure culture of long-chained hemolytic streptococci was obtained and on March 31 numerous short-chained diplococci were found.

For the first four weeks of her hospital stay she had ten to twenty bowel movements each day without blood or purulent material. She also had frequent bouts of vomiting, which would subside after the injection of glucose and saline by vein. She had two direct transfusions of 500 cc of blood one week apart and moderately large doses of sulfanilamide for a period of ten days, but these did not change her condition appreciably. After six weeks in the hospital it became apparent that convalescence would be protracted, and so she was transferred on April 16 to the Montefiore Hospital for chronic disease.

A recent report from the director stated that the patient was in excellent physical condition during her whole stay in that institution and had had an average of two to three fairly well-formed bowel movements daily with a small amount of mucus. He felt that this was the last remaining evidence of her gold colitis, and so she was discharged cured on July 1, 1939, approximately six months after her first injection of gold.

Discussion

It is evident from these records, that this case is in many respects similar to the one cited. It differs only in the fact that our patient had no rash and no blood or pus in the rectal discharges. The ulcers, however, had the same general characteristics and were associated with the short-chained diplococci described by Barger. We feel that the mechanism of the production of this colitis was somewhat as follows: the patient must have been unusually susceptible to the heavy metal—gold—for the initial dosage was kept very low (it has been our experience that if we keep the first four doses small, we are often able to detect any idiosyncrasy to this drug). This hypersensitivity manifested itself by injury to the endothelium of the blood vessels in the mucosa of the large bowel as the drug was being eliminated. This in turn resulted in thrombosis of these vessels with ulceration of the mucous membrane of the sigmoid. The organisms recovered were in all probability normal inhabitants of the colon and played no role in producing this condition. Otherwise, one could hardly

COLITIS FOLLOWING INJECTION OF GOLD SALTS

LE MOYNE COPELAND KELLY, M D, New York City

IN A recent issue of one of the country's outstanding journals, a case was cited by a physician in Connecticut in which frequent bowel movements progressed to a fulminant colitis within a short time after the last injection of a gold salt for lupus erythematosus. The editor stated "No references have been found in the literature to reactions from gold injections in which there was a complicating involvement of the mucous membrane of colon." This has prompted us to report just such a case, which was seen recently in New York City.

Case Report

Mrs. C. K., aged 32, a Jewish housewife, was first seen on November 16, 1938, complaining of pain and swelling of the joints for a period of two years. At first the toes were the only parts involved, but soon the ankles, fingers, wrists, and elbows became similarly affected. Physical examination at this time was essentially negative. The cervix was mildly eroded. Examination of the skeletal structure showed marked swelling with increased heat in the area of the external malleoli. Motion in the ankles was normal in range but painful. She had full motion in the elbows. There was a fusiform, periarticular swelling of the first interphalangeal joint of both thumbs and index fingers and generalized thickening of the right wrist. Motion was estimated in the wrists as follows: right, flexion 160°, extension 195°, left, flexion 175°, extension 185°.

The laboratory findings revealed a sedimentation rate of 85 mm per hour (normal by this method is 8-10), nonprotein-nitrogen, 21 mg per hundred cubic centimeters, fasting blood sugar, 105 mg, uric acid (determination done on the serum), 3.2 mg, blood Kline, negative. Blood count was normal except for w b c 10,900, with 66 per cent polymorphonuclear leukocytes.

We had the opportunity of securing a report of the patient's condition eighteen months previous from Dr. A. S. Gordon, of Brooklyn, who took care of her at that time. In May, 1937 (six months after the onset of her symptoms), she already had pain and swelling of both index fingers and swelling of the left wrist, left ankle, and both sternoclavicular joints. General physical examination was entirely negative. The

complement fixation test done in September, 1937, was normal, and the sedimentation rate was 24 (by Cutler's method). The patient was treated continuously for a year at this time with an especially prepared vaccine without permanent benefit.

With this two-year history and such generalized signs in the joints confronting us, we determined to try to secure for this patient the same benefits from gold therapy that we had seen in many other cases. The patient was so disabled and in such pain that she readily consented to any therapy that might be expected to help her. Consequently, on December 16, 1938 (one month after she was first examined), we gave her the first dose of gold sodium thiosulfate by vein. It was determined in advance to keep the first few doses down, since the patient had shown some slight evidences of hypersusceptibility—namely a mild urticarial rash following the first of two injections of Coley's toxins and generalized itching after taking $\frac{1}{2}$ gram of codeine sulfate by mouth three times a day for pain. (This disappeared entirely forty-eight hours after the cessation of the therapy.) Injections were given therefore, at weekly intervals and in the following amounts: 5 mg, 10 mg, 10 mg, 10 mg, 15 mg, 35 mg, 50 mg, 75 mg, and 100 mg, making a total of nine injections (0.31 Gm of gold). On January 20, 1939, her blood count was entirely normal (w b c 7,800), and she showed no evidences of toxicity during this time. In addition, scaphoid pads, paraffin applications to the affected joints, and aspirin and cinchophen by mouth were given without benefit. She received her last injection on February 10 (100 mg) and said that except for a severe cold in her chest during the preceding week she had felt about as usual. Therefore, it was not until we received a request on March 2 for a summary of her previous record that we knew of the reaction in her gastrointestinal tract.

The patient was admitted to the medical service of a Brooklyn hospital on February 28 (eighteen days after her last injection of gold) with the complaint of abdominal pain and frequent, watery stool of seventeen days' duration, vomiting for past four days and unproductive cough for five days. Soon afterward, stomatitis developed, and this persisted throughout her hospital stay. Sigmoidoscopic examination showed many clear-cut ulcerations of the colon.

Maternal Welfare

From time to time under this heading articles appear on obstetrical subjects which are deemed of importance as aids to improvement of maternal welfare in New York State. The members of the committee are Charles A. Gordon, M.D., chairman, James A. Quigley, M.D., and Ferdinand J. Schoeneck, M.D.

Placenta Praevia

VAGINAL bleeding in the latter months of pregnancy must be considered as a serious complication. Such cases should not be examined in the home or office, but must be hospitalized for diagnosis and treatment. All bleeding cases should immediately be matched for blood transfusion, since this measure is often of paramount importance.

Differential diagnosis will usually be confined to placenta praevia, abruptio placenta (premature separation of the placenta), and onset of premature labor. This discussion will be limited to placenta praevia.

Placenta praevia usually occurs in the last three months of pregnancy and is characterized by painless, bright red vaginal bleeding. As a rule the hemorrhage assumes the character of frank bleeding, however, the initial hemorrhage is rarely fatal. The complication is due to the fact that the placenta is inserted in the lower uterine segment, covering in varying degrees the internal os of the cervix. The severity of the case depends not so much on the area of the cervical os covered by the placenta as on the amount of blood loss. Nevertheless, when the cervical os is completely or almost entirely covered by the placenta, the mechanical obstruction to vaginal delivery makes the proper handling of the case more difficult.

Diagnosis is made by history and vaginal examination. It cannot be emphasized too often that vaginal examination should not be undertaken until the patient is hospitalized and all precautions taken to combat immediate severe hemorrhages that may be initiated by the vaginal manipulation.

Many clinics advocate the diagnostic technique of introducing the index or middle finger of the examining hand through the cervical os and locating the placenta by direct palpation. Such manipulation may precipitate immediate fresh bleeding. While such procedure occasionally becomes necessary to be sure of the diagnosis it is suggested that many times the placenta may be located by palpating through the lower segment. If one is able to feel the presenting part throughout the entire radius of the lower segment he may be reasonably sure that the segment is free. On the other hand, if the pre-

senting part can be felt on one side, but not on the other, the diagnosis can be made. If in addition, the edge of the placenta can be outlined through the lower segment the exact extent of the praevia may be determined.

Since treatment of placenta praevia is often influenced by the extent to which the placenta covers the internal os, it becomes important to localize this organ. When the placenta entirely covers the internal os, the condition is known as complete placenta praevia, if approximately half of the os is covered, we classify it as lateral or partial placenta praevia, if only a small portion of the os is involved, the classification is marginal placenta praevia. Occasionally, the placenta will be implanted in the lower segment, but will not be sufficiently low to actually involve the internal os. We speak of this situation as a low implantation of the placenta.

Treatment should have two objectives: first, supportive and, second, control of immediate hemorrhage or prevention of the recurrence of dangerous bleeding.

Supportive treatment must aim at combating shock from blood loss and replacement of this loss. This angle is best handled by blood transfusion. In fact, transfusion is so important that it should take precedence over all other measures, with the possible exception of controlling immediate massive hemorrhage, when such bleeding may obviously terminate in an immediate fatality. In such an eventuality, it is plain that transfusion should be employed in conjunction with other procedures or as soon thereafter as it is humanly possible to obtain donor's blood.

The second phase of treatment depends on the parity of the patient, the type of placenta praevia involved, and the period of gestation.

It can be stated rather dogmatically that complete placenta praevia in the primipara is best handled by cesarean section, providing the patient's general condition makes her a satisfactory operative risk or that supportive treatment can convert her from a poor to a satisfactory operative risk. Occasionally, the hemorrhage will occur just prior to the time at which the child becomes viable. In such instances it may be feasible to attempt to carry the preg-

explain the rapid healing of the ulcers in the presence of these bacteria

Conclusion

Involvement of the colon is a rare complication of gold therapy, but when it does occur, it results in severe and pro-

tracted illness. The onset of abdominal pain and diarrhea in this case, twenty four hours after the last injection of gold sodium thiosulfate by vein, strongly suggests that this medication was the cause of her colitis.

133 East 58th Street

BUNDLES FOR BRITAIN

BUNDLES FOR BRITAIN, 484 Park Avenue, New York City (Plaza 3-1877-8-9), can use any of the items listed below

	No in Sklar Catalogue		No in Sklar Catalogue
25 Chevalier-Jackson Bronchoscopic Outfits		2,000 Sinus forceps, Lister 5"	
25 Oesophagoscopes with forceps and aspirators (made by Pilling of Philadelphia)		500 Towel clips, 5", Backhaus	6402
50 Sigmoidoscopes, complete	4571	500 Tissue forceps, Lane	588 ?
50 Examination and Catheterising Cystoscopes, complete	4768	500 Tongue forceps, Corbould	281
50 Bladder Retractors, Thomson Walker	5262	500 Cheadle's forceps	644
100 Gastrojejunostomy clamps, Lane's Twin		500 Bowl Sterilizer forceps, Harrison	645
100 Intestinal Straight clamps, Doyen 9"	1391	500 Lung forceps, Duval	
100 Intestinal Curved clamps, Doyen 9"	1393	1,000 Dressing forceps, French pattern	576 ?
5,000 Artery forceps, Spencer Wells 5"		500 Scissors abdominal straight, Mayo 7 1/2"	368
1,000 Artery forceps, Mayo Oschner 7"		500 Scissors abdominal curved, Mayo 7 1/2"	373
1,000 Artery forceps, Halsted's curved, fine points	491	500 Syringes Record 20 c c	7530
1,000 Artery forceps, Kelly's curved	506	500 Syringes Record 10 c c	7530
5,000 Dissecting forceps plain 5"	624	500 Syringes Record 2 c c	7530
2,000 Dissecting forceps toothed 7"	635	500 Syringes Record 1 c c	7530
		100 Plaster Shears	392/3
		500 Forceps Peritoneal Allis	1398
		500 Mouth Gags	3610
		10,000 Yards Mackintosh Rubber Sheeting	
		100 Uterine Vulsellum forceps, Teale 8 1/2"	6408
		100 Sets Uterine Dilators, Hegar	6217

(? indicates nearest catalogue number to specification)

A STUDY TO EVALUATE ORIGINAL SEROLOGIC TESTS FOR SYPHILIS

More than five years ago the Committee on Evaluation of Serodiagnostic Tests for Syphilis, in cooperation with the United States Public Health Service, conducted a study to evaluate original serologic tests for syphilis or modifications thereof in the United States. The results of this study were published shortly after the investigation was completed.¹

Consideration is now being given by the Committee to the organization of a second evaluation study of original serologic tests for syphilis or modifications thereof within the next year. If the need for an investigation of this kind seems to justify the cost, invitations will be extended to the authors of such serologic tests who reside

in the United States, or who may be able to participate by the designation of a serologist who will represent them in this country. The second evaluation study will be conducted utilizing methods comparable to those employed in the first study.²

Serologists who have an original serologic test for syphilis or an original modification thereof and who desire to participate in the second evaluation study should submit their applications not later than October 1, 1940. The applications must be accompanied by a complete description of the technique of the author's serologic test or modification. All correspondence should be directed to the Surgeon General, United States Public Health Service, Washington, D C.

¹ Ven Dis Inform 16 189 (June) 1935 J A M A 104 2083 (June 8) 1935

² J A M A 103 1705 (Dec. 1) 1934

Medical News

County News

Broome County

Recent announcement that the Broome County Medical Society has postponed for one year decision on the proposal to establish a new medical treatment insurance with countywide and statewide hospitalization insurance already existing is followed with announcement that the Board of Supervisors may appoint salaried county physicians to reduce expenditures more than \$300,000 annually for medical and hospital care for relief. Possible savings were discussed at a meeting of the supervisor's committee on law and legislation, and Supervisor Frank T. Macey stressed the value of having adequate facts and data for consideration. Cost of medical and hospital care for relief cases during 1938 were \$350,000 with no figures available for 1939.

Cayuga County

Dr. Lawrence Burton Sisson, of Auburn, who died on June 17 at the age of fifty was a former president of the Medical Society of the County of Cayuga.

Greene County

The midsummer meeting of the Greene County Medical Society was held at Ledge-End Inn, Haines Falls, July 9. Dinner was served at 6:30.

Dr. William J. Hoffman, New York City, was the guest speaker. His subject was "The Modern Treatment of Cancer," illustrated with slides.

Nominations were made for officers to be elected at the annual meeting in October. The vice-president also delivered his annual address.

Up in Prattsville, high in the Catskills, on a day in late June, "it seemed like heaven to a quiet little man of seventy-seven who didn't have to die to get his reward," says a correspondent of the *Albany Knickerbocker News*.

Dr. Ichabod T. Sutton was about the nearest thing to a king as any man could be in a rugged little American village.

The whole community had marched down the center of the village cheering along the way, behind automobiles all decked out in varicolored tissue paper, saying the biggest, most ceremonious "thank you" in local history to the humble physician who never let us down.

They were glad, said one speaker that they were able to give the Doc his funeral before he was dead.

Doc Sutton thought so, too, but he said he guessed he'd spoil it if he said too much. Any remarks from him he guessed would mar it.

The big ceremony was back of Becker's Cabins where folks grouped around a rude little wooden platform and sang "God Bless America." Meaning it.

All the people little tots to grownups who were delivered into the world by Dr. Sutton wore little tags saying "Doc Sutton's Baby." There were few who weren't tagged.

Up on the platform with the Doc was his wife, a former Conesville one-room school teacher. Doc had to drive his buggy ten miles to court her.

The Methodist and Reformed Church ministers spoke about the Doc. So did Bill Peckham, who went away a few years ago to study for the pulpit and who now preaches in Kingston.

Albert Lutz, who'll be fifty in August, would make two, maybe three, of the little physician Big, brawny and a little bashful, "Al" sat on the platform, because he was the first baby the doctor ever delivered.

"Somebody had to try Dr. Sutton out," he confided to a villager. "My mother did it." Doc went down to the Lutz farm in Johnson Hollow to deliver Al. Al still lives there.

Claude V. White, village insurance man, presented Doc with a memory book recalling events in his life. Claude said he wasn't a Dr. Sutton baby, but if it hadn't been for a little operating the Doc once did on him, he wouldn't be here. A new automobile stood near the platform and the Doc turned to his wife during the ceremony and asked:

"Could they mean that's for me?"

"What do you think?" she whispered back. When they brought the car out in front and announced it was his, the Doc murmured disbelievingly, "Well, what do you know about that?"

Dr. Sutton entered practice about the time the germ theory of disease was becoming popular. Folks thought it funny because I used to wash my hands before operating. They thought it was a whole lot more important to wash afterward," he recalled.

The veteran physician got quite a name around the Catskills in 1900 when he performed the first appendectomy in the region.

I did it on a kitchen table," he recalled. It surprised people, caused a lot of talk. Appendectomies were new then. They hadn't even taught Doc about them in medical school.

From there on, the physician did a lot of surgery in improvised operating rooms. Mrs. Sutton would go along and help.

On Clay Hill, his horse used to sink "right down to his neck" in the mud. Doc would have to walk two or three, sometimes many more, miles to reach patients.

Until this day, Doc Sutton carries a regular first aid station in his car, prepared for any thing. He has had a car since 1915 but cars weren't much good on the mountains until recent years. He always had to walk a part of the way when the weather was bad.

Folks said Doc has delivered 5,000 babies, 'but it's exaggerated a little," he thinks. They didn't keep records in the old days so I wouldn't know exactly," he explained. I'd say it was over 3,000 though.

Today, Prattsville folks watch for the Doc in the new car they gave him. They're keeping an eye out to see that he doesn't drive too fast. It's just that no one wants Doc to get in an accident. They'd miss him, if they happened to get sick.

nancy to viability, providing the hemorrhage has stopped spontaneously. If such a decision is made, the patient must be kept in a hospital and provision made to institute immediate treatment in the event of recurrent hemorrhage.

The management of the lateral or partial variety in primiparas depends somewhat on the severity of the hemorrhage, condition of the lower segment, and dilatation of the cervix. Most authorities would not argue against cesarean section in this circumstance. On the other hand, if the patient is in labor, or the cervix partially dilated, simple rupture of membranes or bag insertion may arrest hemorrhage and successfully control the situation.

Many marginal praevias in primiparas may be handled by rupture of membranes or bag insertion. However, if the cervix is long and undilated, or if other circumstances point to a rather prolonged labor, a cesarean may give more satisfactory results. As an example, we may visualize a primipara of 40 years of age with a posterior position and unengaged head associated with a marginal placenta praevia. In this instance the child would be particularly valuable and we might expect a difficult labor. Cesarean section would probably be the method of choice.

Complete placenta praevia in the multipara is usually best handled by cesarean section, especially if the patient is not in labor. If the patient is in labor and the cervix sufficiently dilated to allow easy introduction of the hand, a podalic version may be performed. However, it must be strongly emphasized that extraction of the child cannot be undertaken until the cervix is completely dilated. Any attempt to deliver a child through an incompletely dilated cervix in the presence of a placenta praevia will almost always result in a cervical laceration which extends into the placental site, thus causing rupture of the uterus with practically 100 per cent fatality. Likewise, an attempt to dilate the cervix manually in any type of praevia will almost invariably result in the same sequence of events.

Most cases of lateral or marginal placenta praevia in multiparas can be handled by bag insertion. If the patient is in labor, or the cervix partially dilated, simple rupture of membranes may allow the presenting part to descend suf-

ficiently to tampon the placenta and control bleeding. Unless there are unusual circumstances present, cesarean section is not indicated in this group of patients.

This treatment, as outlined, assumes that the hemorrhage at the time is sufficient to indicate immediate control. When the hemorrhage has ceased spontaneously or is not of immediate consequence, the same type of treatment should be followed, since it must be remembered that each consequent hemorrhage carries the added possibility of a fatal termination.

The Braxton Hicks version is not generally employed at present with the possible exception of hemorrhage with a pre-viable fetus.

In the event of immediate massive hemorrhage which obviously threatens the patient's life, we may have to resort to effective vaginal packing. In these tragic situations, heroic measures, such as tearing the bed sheets into strips for vaginal packing are effective, but it must be remembered that there is no point in preventing death from hemorrhage and killing the patient by means of infecting her by poor technique. Every practicing physician should carry sterile vaginal packing for just such emergencies. At this point it should be stated that some authorities feel that vaginal packing has no place in the hemorrhage of placenta praevia. These authorities advocate simply giving the patient a large dose of morphine until the patient reaches the hospital, where proper measures can be taken.

There are many more angles that pertain to the proper conduct of cases of placenta praevia. However, this discussion does not pretend to cover the subject completely. Most physicians in general practice prefer to have these cases handled by the specialist. In most instances, the patient's best interests will be served by such combined efforts. The general practitioner must assume the responsibility of hospitalizing these patients immediately—getting them into the hospital as soon as possible and in the best condition for whatever procedure is deemed advisable. He should be very sure that blood donors accompany the patient.

Bleeding in the latter months of pregnancy is serious. Many women still die as a result of placenta praevia. We should have the utmost respect for this complication.

WAR INDUSTRIES AND THE DOCTOR

Modern warfare depends on industrial production. The skilled worker becomes of importance equal to that of the man under arms. Loss of working time by skilled and indispensable workers, no matter what the cause, must be

classified in wartime as casualties which require mobilization of medical resources for competent handling just as do those which occur in the field. The medical profession needs to be well prepared to shoulder this special responsibility.

—J A M A

dent, Dr Henry J Vier, of White Plains, was authorized to designate a committee to lay plans for the mobilization of Westchester medical personnel and facilities in the event of national emergency.

Dr Vier has announced the appointment of Dr Erich H Restin, of Mount Vernon, as chairman of the Westchester committee. Other members are Dr Christopher Wood and Dr Edward H Marsh, of White Plains, Dr Reginald A Higgins, of Port Chester, Dr George C Adie, of New Rochelle, Dr Frederick E Vaughan, of Mount Kisco, and Dr Wilbur W Stearns, of Yonkers.

The committee is expected to begin its work immediately, since the national plan involves many important responsibilities to be assumed by county medical societies in enlisting, qualifying, and classifying medical men for service, in providing medical examiners for the recruiting

offices, and in facilitating the organization of various medical units for active service in the field.

Yates County

Dr Leon M Kysor, of Hornell, was elected president of the Lake Keuka Medical and Surgical Association on June 21 at the closing session of the forty-first annual meeting which attracted more than 130 medical men from twenty-two counties to Penn Yan for the two-day program in the Keuka Hotel.

Dr Kysor succeeds Dr Elliot T Bush, of Elmira, who arranged this year's program and then was prevented from attending by illness.

Other officers elected include Dr Noble Chambers, of Syracuse, who was named vice-president to succeed Dr John A Hatch, of Penn Yan, and Dr Virgil H F Boeck, of Dundee, who was re-elected secretary-treasurer.

Deaths of New York State Physicians

Name	Age	Medical School	Date of Death	Residence
John J Collins	67	P & S N Y	July 8	Brooklyn
Caesar Hirsch	55	Freiburg	May 14	Manhattan
Charles E Long	71	Buffalo	July 4	Williamsville
Isaac Rich	69	L I C Hosp	February 4	Manhattan
Edward A Rowland	57	Alabama	July 10	Manhattan
William W Scott	69	N Y Univ	December 19	Manhattan
Morris M Wechsler	36	N Y Hom	February 7	Bronx

PHYSICIANS NEEDED FOR ARMY SERVICE

The physician, like every other American, has become actively interested in our national security and stands ready to contribute his services as required for military preparedness.

The immediate problem, in this connection is one that concerns the War Department and primarily the young physician. The War Department must procure sufficient additional personnel from the medical profession to augment the medical services of the Regular Army as the various increases are made in the strength of the Regular Army, as authorized by Congress, to meet the partial emergency. The young physician is especially concerned because it is usually advantageous and is often more convenient for him to serve with the Army.

Present plans of the War Department are designed to make service attractive and instructive for the young physician. If the physician holds a Medical Corps Reserve commission, he can be ordered to active duty if he so requests. If he does not hold a commission but is under 35 years of age and is a comparatively recent graduate of an accredited school, he may secure an appointment in the Medical Corps Reserve for the purpose of obtaining extended active duty for a period of one year or longer. Duty is given at general hospitals, station hospitals, and with tactical units and embraces all fields of general and specialized medicine and surgery. Excellent

postgraduate training is obtainable in connection with aviation medicine. After serving six months of active duty in the continental United States, a reserve officer may request duty in Hawaii, Panama, or other United States territories and possessions. The initial period for duty is for one year, and yearly extensions are obtainable thereafter until the international situation becomes more clarified and our domestic military program becomes stabilized.

Many young doctors who have served with the Army on extended active duty have taken the competitive examination for entrance into the Medical Corps of the Regular Army. Extended active duty affords an excellent opportunity for the physician to observe modern military medicine and the facilities that exist for a complete and comprehensive medical practice.

Pay is according to rank and, including subsistence and quarters allowances for an officer with dependents, amounts to an annual sum of \$3,905 for a Captain and \$3,152 for a First Lieutenant, or, without dependents, to an annual sum of \$3,450 for a Captain and \$2,696 for a First Lieutenant. In addition reimbursement is made for travel to duty station and return.

Further information may be obtained by writing to the Surgeon General United States Army, Washington, D C.

Nassau County

Almost 100 physicians took part in the annual golf tournament and dinner of the Nassau County Medical Society at the Wheatley Hills Golf Club, East Williston, on June 28

In a short business session which preceded other activities, five men were admitted to membership

The golf team representing the North Country Community Hospital, Glen Cove, won one year possession of the cup placed into competition several years ago by James E. Stiles, publisher of the *Nassau Daily Renew-Star*. In addition to the winners, teams from Nassau Hospital, Mineola, and South Nassau communities, Oceanside, vied for the trophy. The golfers from the latter institution won it last year. The kickers' handicap was won by Dr. N. H. Robin, Hempstead, with Dr. Michael J. Dunne, Sea Cliff, second, and Dr. G. B. Harrigan, Great Neck, third.

Dr. Eugene Calvelli, Port Washington, presided at the dinner. There were no after-dinner speakers. Dr. Aaron Higgins, Rockville Centre, president-elect, will assume the position at the first fall meeting, September 24 at Cathedral House, Garden City.

New York County

The Special Committee on New Members of the Medical Society of the County of New York reports some of its difficulties in the *New York Medical Week* in part as follows, as stated by Dr. Eugene F. Traub, chairman.

In making a survey of our contacts, I think that the principal reasons that eligible physicians fail to apply for membership are

- 1 Misinformation or lack of information of the benefits of membership in the county society
- 2 Indifference to their own interests and those of the community
- 3 Reluctance to or difficulty in paying the dues

The Committee feels that the following points, as a result of our survey, should be discussed and considered

1 A recommendation that more attention and consideration be given the group of younger men who constitute the backbone of our most desirable prospects. We feel that there is perhaps not as much gained as should be gained from being members of the Medical Society of the County of New York.

2 If the society is in favor of having an active interest in its new members, is the society either able or willing to help the new members personally?

3 Should not there be formed a personal branch of the society to see that its younger members are given help and advice in locating in practice, opportunities for hospital appointments, and other advantageous connections?

The Committee feels that there is need of some revamping of the duties of the society to its members, as earnest and clear-thinking members in our ranks are asking, what is to be done about private practice, the status of competition of clinics, etc. The Committee feels that some mechanism might be evolved to enlighten these younger men in problems confronting them as they begin practice in the city.

Oneida County

The annual meeting and dinner of the Oneida County Medical Society was addressed by Dr. James M. Flynn, president of the State Medical Society, at the Yahnundaiss Golf Club on July 9. There was a program of golf, swimming, and tennis during the day.

Ontario County

The quarterly meeting of the Ontario County Medical Society was held at the Geneva Country Club on July 9.

The business meeting was followed by a dinner and the scientific session. Speakers included Dr. C. W. Greene, Buffalo, and Dr. David D. Rutstein, Albany, who discussed "The New Aspects of Treatment and Control of Pneumonia"; Dr. John R. Williams, Rochester, and Dr. Arthur C. Parker, Altmar, who gave an illustrated talk on "The Use of Hobbies in Therapeutics."

Richmond County

The Richmond County Medical Society held its regular monthly meeting at the Richmond Borough Health Center, on June 12.

After a short business meeting, the scientific program was introduced by the president, Dr. Herbert A. Cochrane, with Dr. Edward Navarra and Dr. Milton Sills Lloyd as speakers. Dr. Navarra spoke on "The Management of Strabismus." Dr. Lloyd's title was "Surgical Case Presentations and Pathology of Bullous Emphysema." Lantern slides were shown in connection with these subjects.

The society welcomes seven new members: Ignatius Sommer, George Pittinos, Bernard Kasdan, Fred Shatanof, Lawrence Viola, Aaron N. Horn, and Bernard Miller.—*Reported by George W. McCormick, M.D., Secretary*

Schenectady County

The recent semiannual meeting of the Medical Society of the County of Schenectady was noteworthy because of the first appearance of a musical organization composed entirely of members of the society.

Much credit is due Dr. Glen Smith, who was the moving spirit in rounding up the musical talent among the membership, and then despite the many interruptions that all physicians are heir to, he succeeded in holding weekly rehearsals for a period of about four months prior to the meeting. The initial concert by the orchestra was well received, and the 120 members and guests present demanded many encores.

Dr. Smith plans to continue this musical venture, and it is hoped that it will become a permanent part of the extra-medical activities of the Schenectady County Medical Society.

At a recent meeting of the American College of Chest Physicians, Dr. Arthur Q. Penta, of Schenectady, was elected secretary of the New York State Chapter.—*Reported by Joseph H. Naumoff, M.D., Secretary*

Westchester County

The Westchester County Medical Society has announced the appointment of a special committee on medical mobilization. Action was taken by the Comitia Minor, when the presi-

large, standard size x-ray camera, which takes a picture 14 by 17 inches. The small camera was introduced in Detroit experimentally about January 1.

Acquainted with the manufacturer's attempt to produce the small camera, Dr Bridge, director of Iola, watched the experimental work, criticized the machine, and then suggested its purchase to the board.

Placed in the dispensary or outpatient department, it has increased the output of the department about 50 per cent, reduced storage space relatively 65 per cent, and decreased material costs around 83 per cent, Dr Bridge said.

"It is relatively inexpensive and more than reasonably accurate," he declared.

Before passing final judgment on the machine,

technicians compared one thousand large size x-rays and one thousand of the new size and found a disagreement of less than 1 per cent. No projector or enlarger is necessary to examine the x-rays, Dr Bridge explained.

At the time the machine was installed, the dispensary was six weeks behind in its examinations. Within six days, Dr Bridge said it had caught up with its schedule of appointments. The smaller size film permits the development of six exposures at one time. Use of the larger size film will be continued in the sanatorium proper, the small size being used in the outpatient department.

Approximately 12,000 pictures are taken in the dispensary each year while 20,000 are taken in the sanatorium.

Newsy Notes

Dr S S Goldwater, Commissioner of the Department of Hospitals, New York City has accepted the appointment as president of the Associated Hospital Service for New York, the 3-cent-a-day plan, it is announced by the board of directors. Dr Goldwater the announcement said, will continue to serve as Commissioner of Hospitals until relieved of the responsibilities by Mayor LaGuardia.

David H McAlpin Pyle, chairman of the board and vice-president of the service has been acting president and will continue as chairman of the board.

More than a million and a quarter subscribers belong to the 3-cent-a-day plan and about 400 of these are admitted to hospitals daily for necessary hospital services. Payment is being made to these hospitals at the rate of \$8,000,000 a year, according to Mr Pyle.

Dr Frederick McCurdy, superintendent of the Vanderbilt Clinic, was elected president, David Q Hammond, superintendent of Fifth Avenue Hospital, a vice-president, and Austin J Shoneke, superintendent of New Rochelle Hospital, treasurer.

The Triboro Tuberculosis Hospital in Queens will not be in full swing until the end of this year, but the \$3,000,000 institution will begin accepting patients within two months, according to the Hospital Commissioner.

Any infant that has the impatient bad grace to be born ahead of its time at Beth-El Hospital, Rockaway Parkway and Avenue A, certainly does not find a cold cruel world awaiting it.

For the premature youngster is immediately popped into one of the hospital's new, streamlined humidocribs in a specially built premature nursery.

There the infant remains until he—or she—weighs five pounds, then he graduates. In the humidocrib the infant enjoys the advantages of a uniformly-maintained temperature of 85 degrees and a humidity of 65 per cent. Nurses specially trained in the care of premature infants care for him.

As the result of this special care the number of premature deaths per 1,000 live births at the hospital during the twelve-month period covering 1938-1939 was reduced to 2.03 as compared with 4.17 for the same period in 1937-1938. During this period in 1937-1938 the rate for the entire city was 12.4.

At the annual meeting of the Hospital Association of New York State, held at Buffalo May 23

Because of a recent sharp falling off in admissions of patients to the \$1,700,000 New York State Reconstruction Home in West Haverstraw, one of the most elaborate hospitals for handicapped children in the country, the twenty-six-building institution, which is equipped to treat educate, and rehabilitate under long term hospitalization more than 350 patients at one time, now has only 91 patients and 232 employees.

Physicians associated with the institution attribute the declining patient population not so much to a diminishing number of crippled children needing treatment as to the effect of certain state legislation, that operates to steer these patients into private hospitals less efficiently equipped but less expensive for the local counties that have to share the cost of hospitalizing the children. At the time the State's own hospital is suffering for lack of patients the State is required to share with the counties the cost of maintaining the children in the private hospitals.

With the decline of patient admissions at the Reconstruction Home, there has been a movement afoot to place the hospital under the direction of the State Department of Mental Hygiene which operates eighteen hospitals for the insane and six institutions for mental defectives and epileptics.

Hospital News

Hospitals Preparing for War Service

THE nation's speed-up of war preparedness has made advances on another front with disclosure that six New York hospitals have organized complete units prepared to shift into military service at the command of Washington.

These units—aligned with fifty-six others from hospitals throughout the country—are prepared for instant mobilization in a streamlined plan of Army medical service designed to improve World War practices. Each hospital unit will remain intact, providing a maximum of coordinated effort. In the last war medical men from each hospital were scattered haphazardly through the service.

Under direction of Surgeon General James C. McGee, the sixty-two hospitals have enlisted war staffs comprising 2,500 physicians, surgeons, and specialists. They are classified as general, surgical, or evacuation staffs for service in army base hospitals.

A spokesman for the Surgeon General's office in Washington told the *New York News* by telephone that every hospital invited to participate in the mobilization plan has accepted.

The units already enlisted, varying in size from thirty-eight to forty-two doctors, would serve thirteen surgical hospitals, seventeen evacuation hospitals, and thirty-two general hospitals.

New York's contribution, thus far, would be evacuation staffs from St. Luke's, Post Graduate, and New York hospitals, and general staffs from Bellevue, Presbyterian, and Kings County hospitals.

Doctors Volunteering Outnumber Commissions

General Hospital 9, for army service during a national emergency, will be organized by the New York Hospital and Cornell University Medical College, it is announced.

Doctors volunteering for service with the unit, it was said, already number three times the commissions available. The New York Hospital, on the East River at Sixty-eighth Street, is the oldest in the city and second oldest in America, its first patients having been American soldiers wounded in July, 1776. The military group being reorganized now will be assigned to a 1,000-bed hospital unit and will become one of thirty-two similar general hospitals being set up under the War Department's "Protective Mobilization Plan," with the cooperation of hospitals throughout the country.

These general hospitals serve in the communications zone of the theater of military operations and treat cases passed along by the surgical and evacuation units in the combat zone. All such medical units, under the War Department's plan, would be mobilized shortly after the declaration of a national emergency. Each will consist of forty-two officers, 120 nurses, and 410 enlisted men. Of these the Administration personnel will consist of ten officers, two nurses, and 110 enlisted men. Nursing personnel will be furnished by the American Red Cross.

The enlisted men are to be acquired at the time of mobilization.

Nurses as well as physicians are being enrolled for possible future war service in hospitals throughout the city in connection with the United States Army's plans for "M Day," the day of theoretical mobilization of the nation's armed forces, spokesmen at several hospitals said.

Miss Florence M. Johnson, director of Nursing Service of the New York Chapter of the American Red Cross, who is in charge of the nurses on call for war service in Manhattan, the Bronx, and Westchester, said that nine hundred nurses in the three counties had their commissions for service with the Army and the Navy, and that between 16,000 and 17,000 throughout the country were ready.

Many of the commissioned nurses entered the reserves several years ago, Miss Johnson said. Others are being enrolled this month, however, in connection with the request by the United States Army to six New York City hospitals to raise hospital personnel units of forty physicians and 120 nurses.

Miss Johnson explained that the nurses to be used in war service were being registered through the Red Cross and said the nurses being accepted were the 'cream of the nursing world' because of the severe physical and professional qualifications being demanded. The accepted nurse, she said, must be between twenty-one and forty, a graduate of a registered school averaging 50 patients a day, an American citizen, and a member of the American Nurses' Association.

The prospective war-duty nurse also must produce a recommendation from the superintendent of her training school and must pass an awfully stiff physical test.

Because of the stern requirements, said Miss Johnson, nurses now being graduated would not be ready to apply before the fall. "We'll get a lot then," she said. She added that many nurses who had served in the last war were "dying to serve in any capacity" but were ruled out by age. Other young women who had had no nursing training were asking to be enrolled, arguing that they were sure they would turn out to be good Red Cross nurses if they only got a chance. All those had to be turned away, she said.

New, Small X-Ray Camera Slashes Expenses at Iola

THE first sanatorium in the country to utilize the new, small x-ray camera, Iola Sanatorium, Rochester, has cut its photographic costs approximately 83 per cent and increased the output of the department 50 per cent, it is disclosed.

The decision to purchase the camera which uses 4- by 5-inch film was made in February by the board of managers of the sanatorium, headed by President Max L. Holtz and composed of Dr. Floyd S. Winslow, Dr. Harvey J. Vary, Judge Milton E. Gibbs, and E. W. Brigham.

Previously, the sanatorium had used the

Books

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- Operative Surgery** By J. Shelton Horsley, D., and Isaac A. Bigger, M.D. Volumes I & II. Fifth edition. Quarto 1,567 pages illustrated. St. Louis, C. V. Mosby Co., 1940. \$18 per set
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Improvements

Work has begun on the new \$4,000,000 Lebanon Hospital in the Bronx. The hospital development will consist ultimately of three units, but present plans call only for the construction of a modern-type, imposing twelve-story structure as the main building—a completely-equipped, 200-bed general hospital.

This edifice will account for approximately \$1,500,000 of the contemplated total expenditure. Two seven-story wings will be erected in the future, one of them a private patients' pavilion, the other to house the maternity and dispensary departments.

The entire institution when completed will have a bed capacity of about 450. This will replace the old building on the bluff at Westchester and Cauldwell avenues, which Lebanon Hospital has occupied for forty-seven years and which previously was the Ursuline Convent.

The twelve-story main building is expected to be completed, equipped, and ready for service within eighteen months or two years.

A \$200,000 modernization program for Faxon Hospital, Utica, is announced.

The program calls for construction of a new unit, replacing the sixty-six-year-old main building and nurses' home, which will match the large wing erected in 1930-1931.

The hospital will continue to be rated as a 130-bed institution, the new construction is primarily a modernization project and is not intended to increase the capacity.

The hospital will contain a modern surgical suite, laboratory and x-ray departments, and a special unit for the care of accident emergency cases.

Faxon Hospital took its name from Theodore S. Faxon, once a stage-coach driver who operated on the pioneer line between Utica and Albany. Later he became sheriff, alderman, mayor, and judge. The institution opened in 1875, has grown from an institution with only thirty-seven beds and fourteen nurses to a bed capacity of 130, and the service consists of eighty nurses. In 1930-1931 units costing \$400,000 were added.

Leonard Hospital, Troy, has a new nursery department, filling its entire top floor. There is a large playroom with books, toys, games, and play tables, a four-bed ward, several private rooms, and also several two-bed rooms. All the

rooms are very different from the austere white-walled hospital rooms into which sick children once were put.

Gay colors, flowered curtains, fairy tale pictures for small eyes to feast upon, child-size furniture, and flowers make the nursery rooms very pleasant places to be.

Vassar Brothers Hospital, Poughkeepsie, will add fourteen beds, enlarging the capacity to 239.

Installation of additional modern scientific x-ray equipment and the formation of a new neuropathology department to the medical staff of the Jewish Sanitarium and Hospital for Chronic Diseases, in Brooklyn, is announced by Bernard Lebovitz, executive director, in the annual report to the directors.

A program for the expansion of patients' and nurses' facilities at the United Hospital, Port Chester, is disclosed in the announcement by President William A. Pond Phipps that sufficient funds have been raised by private subscription to provide for additions and alterations.

The program contemplates the addition of forty rooms by building two stories on Barron Hall. This, it is estimated, will take care of the housing facilities for all additional nurses to be required by the already projected future development of the hospital.

Additional facilities for the nurses will make it possible to rebuild a section of the Macy Home for Nurses to create at least eleven additional hospital rooms.

Plans for a proposed addition to the Julia L. Butterfield Memorial Hospital, to be erected as soon as possible at a cost of \$25,000 or more, are announced by Dr. Coryell Clark, chairman of the board of trustees.

Funds to finance the construction will be raised through public subscription.

The new structure will house pathologic and bacteriologic laboratories, maternity rooms, and nursery and will increase the present bed capacity of the hospital by 30 per cent.

HOCUS-POCUS STILL FLOURISHING

All the centuries of scientific advance are wasted on some people whose minds are still in the voodoo stage. This story, from a California paper, is quoted in *California and Western Medicine*.

"A \$10 bill, supposedly soaked in an herb solution, torn to bits and placed in a handkerchief around the neck of C. Di Cicco, aged Windsor resident, failed to cure his rheumatism

and he found the bill in the handkerchief intact, good as new. The 'charm lady,' who began the treatment returned and said his \$400 life savings, treated the same way, would cure his ailment. Nine days later Di Cicco opened the handkerchief and found a wad of torn green paper. Di Cicco has an added pain now while the 'charm lady' is being hunted by officers."

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REVIEWED

A Textbook of Occupational Diseases of the Skin By Louis Schwartz, M D, and Louis Tulipan, M D Octavo of 799 pages, illustrated Philadelphia, Lea & Febiger, 1939 Cloth, \$10

This book fills a long vacant space in the dermatologic library. The average textbook on skin diseases devoted very little space to occupational diseases and the venenata group received little more. Here we have a book of eight hundred pages devoted to this large group alone. Every agent capable of producing skin irritation is discussed and given its appropriate place. No subject is too small to be neglected, and the more common irritants are discussed in detail. When one considers the high percentage of compensation cases of dermal origin, the need for such a book becomes patent.

The subject matter is extensive and is grouped according to the etiologic factor and occupation involved. It would be difficult to mention an occupational hazard or an irritant used therein and not find it described and elaborated upon in this book. The explanation of definitions in the chapter on workmen's compensation laws is instructive and informative. The different interpretations of the law and the variance of the laws in the several states are briefly touched upon.

The text bears down heavily on the prevention of this large group of diseases and stresses the advantage thereof. Prophylaxis is the keynote of every chapter.

The advantages and limitations of the patch test are clearly and concisely discussed as is also the role that allergy plays in this field.

The book is extensively illustrated and the legends are more than just titles—they are descriptive and explanatory.

This book should be in the library of every dermatologist and practitioner doing medicolegal work in this field and especially before the various compensation boards.

GEORGE F PRICE

A Topographic Atlas for X-Ray Therapy By Ira I Kaplan, M D, and Sidney Rubinfeld, M D Quarto of 55 plates Chicago, Year Book Publishers, Inc., 1939 Cloth, \$4 00

The authors present, in extremely elementary fashion, a set of fifty-five plates in the drawings of which the surface anatomy of the underlying organs is indicated. Descriptive legends accompany each plate, and the fields employed are well demarcated in the diagrams. The authors, in effect, produce a well-illustrated book which in the final analysis is probably the readiest, most practical, and efficient manner of teaching radiotherapeutic technic. It should be in all medical reference libraries.

To those who are concerned with x-ray therapy, it visualizes the fields to be irradiated through the windows on the skin, and makes for far greater precision in directing the ray toward the diseased organ, thus indirectly giving us more accurate knowledge of the x-radiation administered in terms of r units.

It is indispensable to radiotherapeutic technicians, and invaluable to the practitioner who would venture into this field.

The publishers have spared nothing as to quality of paper and binding.

MILTON G WASCH

Endocrine Gynecology By E C Hamblen, M D Quarto of 453 pages, illustrated Springfield, Charles C Thomas, 1939 Cloth, \$5 50

Endocrine Gynecology by E C Hamblen is more than another book about the endocrines.

The format displays all the art that is associated with the house of Thomas. A foreword by Collip is timely and cautious. "It is quite impossible to transfer at once the results of the physiologic studies on various animals to man, even though these results may be very clear and readily duplicable."

The author states that the book is primarily for the general practitioner, but the specialist may very well read it with profit. The numerous illustrations are carefully selected and illuminate the text. There are many colored microscopic and macroscopic reproductions of laboratory material.

The book is a welcome addition to the many texts appearing on this subject and is worthy of taking its place among the best.

FRANCIS B DOYLE

Cancer of the Colon and Rectum Its Diagnosis and Treatment By Fred W Rankin, M D, and A Stephens Graham, M D Quarto of 358 pages, illustrated Springfield, Charles C Thomas, 1939 Cloth, \$5 50

In this outstanding volume are incorporated the experiences of the authors as well as the work of other surgeons, here and abroad, interested in cancer of the rectum and colon.

The book is divided into three parts of five chapters each, covering the subject in an orderly, authoritative, and detailed manner. Emphasis is placed on pathology, diagnosis, choice of operation, preoperative and postoperative care, and operative procedures.

The reviewer is thoroughly in accord with the authors' statement in regard to the treatment of patients with carcinoma of the rectum, to wit: "radical surgery is well worth while and that radical surgery may not be applied save by the use of colostomy."

By this time it is well known that Rankin "reluctantly abandoned" the routine use of intraperitoneal vaccine. After giving some interesting figures, the authors state: "This series of cases has convinced us that the decline of the mortality rate under cooperative management which included intraperitoneal vaccination was due more largely to the other rehabilitative and decompressive steps than to vaccine."

There are 133 excellent illustrations and 54 illuminating tables dealing with operability, operative mortality, and end results that reflect the progress made in the management of carcinoma of the large bowel.

There are references at the conclusion of each chapter and a complete author index as well as an excellent index by subjects.

A few typographical errors have crept into the book, such as the incorrect spelling of Sims' name on page 100 and the use of the word "peritoneal" where "perineal" was intended. These will undoubtedly be corrected in the next edition.

The work is complete and should prove of inestimable value to those interested in the subject.

A W MARINO

NEW YORK STATE JOURNAL *of* MEDICINE

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Editorial

The Corrosion of Dependency

"Our freedom," says the Westchester County Medical *Bulletin* in its August issue, "is in growing jeopardy from subtle but overwhelming forces at home." These forces undermine the democratic principle that the individual is more important than the state, that the state is the servant of the people. "The totalitarian state is the master of its people because they have relinquished the responsibilities of free men to a state which has eagerly assumed those responsibilities, and in so doing has bereft all the people of their freedom."

We have frequently stressed editorially the danger to the free and unbossed practice of medicine inherent in the failure of physicians to assume their full share of social responsibility for the progressive development of the art and practice of medicine. Both as individuals and as a group it is fair to say that they have not shirked that responsibility. They have earnestly undertaken the task of fitting the developments of medical science into the structure of a rapidly changing order of civilization, which neither they nor anyone else fully understands.

It is a task of enormous difficulty. It has appeared to some that no longer could democratic principles and practice cope with the problem, because of its vastness. Yet organized medicine and most of the individuals of its membership have never yet proposed to relinquish to the state their individual or collective responsibility for the provision of medical service to the public. The pressure to do this has come from without the profession, from philanthropic agencies of the laity and from government itself.

The inherent strength of the medical profession lies in its willingness to accept its responsibilities and to solve its own problems. It has recognized, as the *Bulletin* observes, that "you cannot give the state power to do something *for* you without giving it power to

do something *to* you " What it does *to* you might well be called the corrosion of dependency The profession observes its effect in our social welfare system "the development of an eager maternalism "

The consistent refusal of organized medicine to accept government subsidy, or to evade its responsibilities has been in the past and is now its greatest defense

Quarantine

The arrival in the United States of many foreign refugees emphasizes the enormously valuable work of the U S Public Health Service in eliminating disease carriers Due to the war in Europe it is inevitable that the hazards to this country should be increased because of overcrowding of ports of debarkation, demoralization of foreign health services, and inadequate sanitary facilities

"The jurisdiction of the public health service," says Dr Robert Oleson, Medical Officer in Charge, U S Quarantine Station, in a letter, "is confined to the so-called quarantinable diseases, namely, anthrax, cholera, leprosy, plague, psittacosis, smallpox, epidemic typhus fever, and yellow fever

"While the public health service through its quarantine stations has no jurisdiction over the ordinary communicable diseases, such for instance, as diphtheria, scarlet fever, dysentery, etc, it does maintain an active interest in such conditions and works diligently with local departments of health in placing such patients under medical care and contacts under surveillance When a vessel arrives in New York with communicable (as distinguished from quarantinable) disease aboard, the matter is immediately reported to the city department of health The department of health takes over from that point

"Upon occasion passengers or members of the crews of vessels are removed to marine hospitals in the metropolitan area in order to establish diagnosis "

With considerable influenza reported currently from Puerto Rico and the city of Menton, France, ordered evacuated by Italian authorities because of the destruction of its water supply and sewage system with consequent large outbreaks of typhoid fever, it may be anticipated that the incidence of infectious disease will rise sharply, especially in the areas that have been subjected to considerable destruction of public works by bombing and shell fire

Although immigration from Europe has been considerably reduced, especially from the continent, it is likely that children and some adults will continue to arrive from England, and that prisoners

from the continent will continue to be housed in Canadian prison camps. Thus, the matter of quarantine and the routing of communicable diseases will assume increasing importance as the war is prolonged.

Teamwork

On page 1263 in this issue of the JOURNAL will be found a full report of the meeting held July 29 at Albany by the Council Committee on Medical Preparedness of the Medical Society of the State of New York and a large number of representatives of the sixty-one county medical societies. At this meeting a general plan of organization was adopted for the registration of physicians, and a program was proposed whereby the medical interests both of physicians and of the people of the several counties might be supervised by the local medical societies.

The following day at The Academy of Medicine in New York City the health, nursing, hospital, and medical resources of the state were surveyed at the request of the State Coordinator for National Defense by the Legislative Commission to Formulate a Long Range Health Program, the detailed proceedings of which are also set forth in this issue. Thus, the integration and teamwork necessary to the medical aspects of the national defense are already under way. First, it is necessary to know what facilities exist, next, whether sufficient personnel is available so that withdrawals of nurses, physicians, and technicians will not have to be made at the expense of civil institutions already heavily burdened with welfare and other cases. It is evident that there is, in the main, agreement between the state and the representatives of the medical, dental, and nursing professions as to general objectives. These are confined as yet to the gathering and classification of information and personnel and the setting up of county committees on medical preparedness, a task of considerable magnitude.

It is gratifying that in this state at least there seems to be a comprehensive grasp of the seriousness of the national situation and a willingness to view it factually on the part of the state and the representatives of the medical and allied professions. Nobody wants war at any time in this country. But no rational person can view what has transpired in Europe in the last few years and say that it will not spread here. It is not likely to if we are in a position to prevent it. But this means long and arduous preparation, training, and a coordinated plan. Of this plan we are witnessing the inception, and, speaking for the medical profession, we are glad to be able to say that respecting teamwork and liaison with the state government much progress has already been made.

Correspondence

U S PUBLIC HEALTH SERVICE

Rosebank
Staten Island, N Y
July 17 1940

410 East 57th Street
New York City
Tel. Plaza 3-7161
July 25 1940

Dear Doctor Irving

I have your letter of July 15, 1940, in which you ask what measures are being taken to prevent the bringing in of communicable disease by refugee children

In reply thereto it should be understood that the jurisdiction of the Public Health Service is confined to the so-called quarantinable diseases, namely, anthrax, cholera, leprosy, plague, psittacosis, smallpox, epidemic typhus fever, and yellow fever. The measures in force against the entrance of such diseases are the same at all times

While the Public Health Service through its quarantine stations has no jurisdiction over the ordinary communicable diseases, such, for instance, as diphtheria, scarlet fever, dysentery, etc., it does maintain an active interest in such conditions and works diligently with local departments of health in placing such patients under medical care and contacts under surveillance. When a vessel arrives in New York with communicable (as distinguished from quarantinable) disease aboard, the matter is immediately reported to the City Department of Health. The Department of Health takes over from that point, applying such measures as may, in its opinion, be required.

Upon occasion passengers or members of the crews of vessels are removed to Marine Hospitals in the Metropolitan area in order to establish diagnosis.

I trust that this explanation will answer the question you have asked.

Sincerely yours,

ROBERT OLESEN,

*Medical Director, Chief Quarantine Officer**To the Editor*

I have been informed by the British Embassy, Washington, that the British Government under the Ministry of Health would be grateful for the services in Britain of twenty general surgeons of about ten years' experience, and thirty general duty men of three to five years' experience. The latter figure is liable to increase at short notice. The remuneration would be on the scale of the appropriate emergency medical service grade, namely, eight hundred pounds and five hundred and fifty pounds respectively per annum, with free board and lodging. Volunteers for this service will act as civilians under the Ministry of Health. They will not be part of the British Army forces and no question of change of citizenship can therefore arise. The British Embassy has been informed that the American State Department will issue passports for volunteers for this service. Transportation will be conveyed.

Would you be so good as to advertise this need in the *New York State Journal of Medicine*? I shall be glad to give information to any men desiring it. I am

Yours truly,

FOSTER KENNEDY

The letter from Dr Olesen was in reply to a letter of inquiry on official measures of today

PETER IRVING,
Secretary

SCIENTIFIC EXHIBITS

1941 Annual Meeting

Applications for space for the scientific exhibits should be made directly to

Dr William A. Krieger,
103 Hooker Avenue,
Poughkeepsie, New York,
Chairman of Committee on Scientific Exhibits

The Annual Meeting will be held May 19-22, 1941, Buffalo, New York. The list will be closed on January 1, 1941.

PETER IRVING, M D, *Secretary*

MALIGNANT KIDNEY TUMORS

A Study of Cases at the Rochester General Hospital During a Twelve-Year Period

ISTVÁN A. GÁSPÁR, M D, Rochester, New York

IN 1883 Grawitz⁷ advanced the theory that certain tumors of the kidney, including a large group of malignant tumors, arise from adrenal rests. He designated these tumors as "*struma lipomatodes aberratae renis*." His points of argument seemed to be quite convincing, and his idea was favored so much that practically all renal tumors were considered as "Grawitz's tumors." The term "hypernephroma" originated at a later date and came possibly from Birch-Hirschfeld¹ who applied it to tumors, benign or malignant, developing especially in the kidneys from misplaced typical adrenal tissue. Since that time many discussions have appeared in the literature on this subject pro and con, without final agreement. Even in our day there is some confusion as to the origin of malignant renal tumors in adults, and we find that a number of physicians think mainly in terms of "hypernephroma" when diagnosing malignant tumors of the kidney.

However, new studies based on larger series of renal tumors have appeared from time to time. Among these, the publications of Sudeck¹² and Stoerk¹¹ were the first ones to reach the conclusion that a large number of the "Grawitz's tumors" were really renal adenomas and originated in the kidney tissue. A very eminent authority of our time, Ewing,⁴ pointed out that some renal tumors arise from adrenal rests but that the vast majority of malignant renal tumors are true renal carcinomas and not adrenal tissue neoplasms.

Adrenal rests occur so infrequently in the kidneys that they seem relatively unimportant in explaining the development of malignant kidney tumors in adults. In addition, the histologic structure of these neoplasms presents more or less definite glandular character, with

columnar epithelial cells and often with papillae, all in favor of renal tissue origin. Other students of this subject, Wright,¹⁶ Crawford,^{2,3} Whitmore,¹⁴ Geschickter,⁸ etc., expressed a similar belief.

It is difficult to gather personal experience in the study of malignant kidney tumors because of the comparative rarity of such neoplasms even in a large hospital. There are only a few studies, such as those of Judd and Hand,¹⁰ Hand and Broders,⁹ Geschickter and Widenhorn,⁸ and Fetter,⁵ that come from world-renowned and large medical centers and are based on abundant material of 100 cases or more. The comparative rarity of these tumors is best illustrated by the fact that Wright¹⁶ could report only 19 cases from the London Cancer Hospital. Out of 10,500 admissions for a tumor of some kind, only 6 patients presented themselves with malignant kidney tumors. Therefore, I thought it worth while to review the material gathered during a twelve-year period in order to draw personal conclusions and to convince myself as to which, the renal tissue or adrenal rests, are giving rise to the largest number of malignant renal neoplasms. In addition I wanted to gather first-hand knowledge of their varying histologic structure, to check the results after removal of the tumor, and to observe how much bearing the microscopic appearance of these tumors has on the prognosis.

During a twelve-year period only thirteen malignant kidney tumors were found at the Rochester General Hospital in a series of about 2,300 post-mortems and in a huge number of operations performed during this period. Only one of the neoplasms could be classified as real hypernephroma. The gross appearance with its central fibrous area and yellow cortex and, histologically,

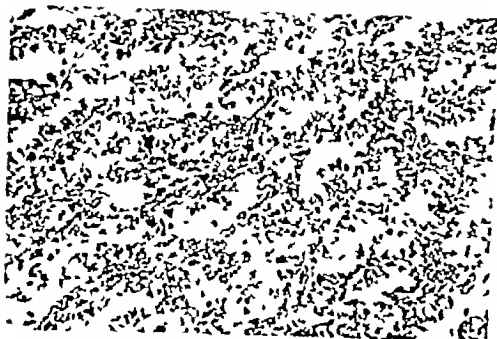


FIG 1 CASE 1 Papillary adenocarcinoma of kidney Fairly orderly papillary glandular character

the foamy, granular cells arranged in cords without the presence of lumens singled out this tumor as probably an adrenal rest tumor. There were ten tumors belonging to the group of adenocarcinomas, papillary adenocarcinomas, and papillary cystocarcinomas, one alveolar carcinoma with probable multiple origin, and 1 case of embryonal adenomyosarcoma of kidney. All except two occurred in patients over 50 years of age. The two exceptions were in a 2½-year-old boy with the embryonal tumor and a 38-year-old man with carcinoma.

Ten patients are dead and only 3 are alive at present. The patient with the hypernephroma is alive, seven full years after nephrectomy, and the 2 other patients are alive within five years after nephrectomy. Among those who died 2 had inoperable tumors and the others died within three years after nephrectomy.

Case Reports

Case 1—D di L, man, aged 55, had a weight loss of about 40 pounds. Blood appeared in the urine for the first time about one month before admission to the hospital. Hemorrhage with clots occurred also at two other times. One of the clots blocked the passage and caused acute urinary retention for a few hours. Cystoscopy showed hypertrophied prostate, and the middle lobe was removed. Two days later his temperature went up to 107 F, and he died. He was in the hospital for three weeks. Tumor of the right kidney was not known until the autopsy.

Postmortem examination The right kidney was enlarged to the size of a cabbage and the

kidney substance was almost entirely replaced by a soft, necrotic, yellowish white tumor. The tumor broke into the kidney pelvis as a mushroom-sized mass. The fatty capsule was also infiltrated. In spite of the very large size of the tumor there were no metastases.

Histology The tumor presented a fairly orderly glandular character with papillae for formation. The structure was uniform throughout (Fig 1).

Diagnosis Papillary adenocarcinoma of the right kidney.

Case 2—S L, man, aged 55, had hematuria, bright red blood and blood clots, for three weeks before admission. There was no pain but he complained of an occasional scratching sensation in the left kidney region. A baseball-sized mass was felt in the left kidney region due either to an enlarged kidney or to a mass attached to it. This patient had previous admissions, each for hematuria. First admission for hematuria was in November, 1922, and second was in 1923. It was thought at that time that his hematuria was due to stricture of the urethra. X-ray studies, including pyelography, showed a pathologic kidney on the left side with marked dilatation of the pelvis, possibly due to a malignant tumor. Nephrectomy was performed through a left rectus incision. The renal mass was the size of a large grapefruit. The upper half of the kidney was involved by a tumor which protruded into the pelvis as a large mass. Apparently it caused partial blocking with resultant hydronephrotic atrophy of the kidney.

Histology The tumor showed a glandular pattern with papillae. This structure was obscured only in areas with much lipid deposit in the tumor cells. There were numerous places with reproduction of adult tubules. Patient recovered after nephrectomy but died one year later of apoplexy. (Postmortem was done but not at the Rochester General Hospital. There were no apparent metastases macroscopically.)

Diagnosis Papillary adenocarcinoma of the left kidney.

Case 3—R L, man, aged 38, had a chief complaint of hematuria beginning about April 8, 1930. He passed bright red blood without pain, and the bleeding continued on and off. On April 13 he developed a dull pain through the left side of the abdomen in the left kidney area. A large irregular mass was felt in this area. Pyelogram showed a distortion of the left renal pelvis. Left nephrectomy was performed. Almost the entire lower pole of the removed left kidney was occupied by a fist-sized hemorrhagic tumor which had broken

into the kidney pelvis. The fatty capsule and the left adrenal were also invaded by multiple tumor nodules. The tumor was snow white except the hemorrhagic areas.

Histology. One part of the tumor presented a papillary adenomatous pattern and also papillary cyst formations. Hemorrhages were abundant in these areas. Here the tumor cells were of the clear type and only in one row. Other places showed bulky tumor masses with frequent mitotic figures, no lumens and often a peritheliomatous arrangement of the cells (Fig 2). There were small necrotic areas. Patient died of multiple metastases to the lungs about eighteen months later. Autopsy was not obtained.

Diagnosis. Carcinoma of the left kidney with papillary adenomatous and peritheliomatous areas.

Case 4—A O man, aged 56, was first admitted on March 29, 1930. Since January, 1930, this patient had had occasional slight pain over the right portion of the hypogastrium. The pain became continuous during March 1930. In February, 1930, hematuria appeared. There was a weight loss of 30 pounds during the past year. In addition, there was a palpable mass in the right upper quadrant, very firm, irregular, freely movable, and slightly tender. An x-ray showed enormous distention of pelvis and calices with enlargement of the right kidney. Metastatic tumors of the lungs were also discovered. X-ray therapy was given.

The second admission was on December 11, 1930. Since the last x-ray treatment, about three months previously, the patient had had intense pain over the sternum, dyspnea, also extreme weakness and malaise. He died on the day of admission. At autopsy the right kidney weighed 1,100 Gm and was almost completely replaced by a yellowish-white, partly necrotic tumor. There were metastases to a few lymph glands of the kidney hilus, and both lungs were studded throughout with numerous metastatic tumor nodules.

Histology. The kidney tumor showed areas with papillary glandular structure. However, there were also large tumor-cell masses without lumens and peritheliomatous arrangement. Atypicity of the cells was marked, and some of the blood vessels contained tumor cells.

Diagnosis. Carcinoma of the right kidney with papillary adenomatous and peritheliomatous areas.

Case 5—C J C, man aged 59 was admitted on June 18 1931. About one and a half years before he noticed blood in his urine for the

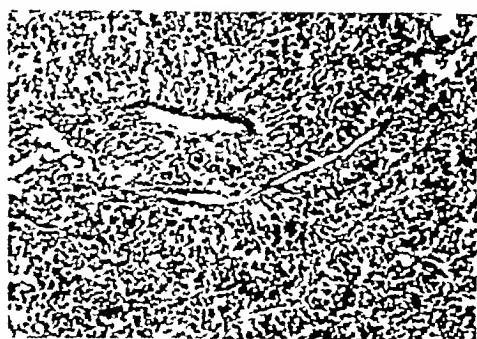


FIG 2 CASE 3 Peritheliomatous structure. Bulky tumor-cell masses radiate from centrally located blood vessels.

first time. It lasted a day and then disappeared. One year before admission the same thing happened. Since then he had noticed blood at intervals of two months. The last bleeding started June 6, and since then he has had blood in the urine most of the time. He never had pain in the kidney region. Cystoscopy established that the blood was coming from the right side. Stereoscopic pyelogram showed a large filling defect in the region of the pelvis and upper pole of the right kidney. These observations suggested a tumor of the upper pole of the right kidney. The lungs and bones showed no evidence of metastatic tumors. Transperitoneal right nephrectomy was performed on June 30. The upper pole of the kidney was occupied by an orange-sized, yellowish-gray, nodular tumor. There was fibrosis around the nodules. The kidney pelvis was filled with a walnut-sized tumor, 3 cm in diameter, and there was hemorrhage into the pelvis.

Histology. Tumor showed adenocarcinoma with clear cells and adult kidney tubules were reproduced. Various parts of the tumor showed similar orderly arrangement throughout. Patient died about eight days after nephrectomy, probably of peritonitis. Autopsy was not obtained.

Diagnosis. Adenocarcinoma of the right kidney.

Case 6—M E H woman, aged 59, had hematuria of varying intensity several times during the nine months preceding admission on December 15, 1931. Pyelogram was done. The right pelvis was rather irregular in outline, suggesting an ulcerative lesion in this portion of the right kidney. Nephrectomy was performed December 26. At the mid-portion of the kidney there was an orange sized, orange shaped, yellow tumor surrounded by a thin fibrous capsule. In the center of the tumor

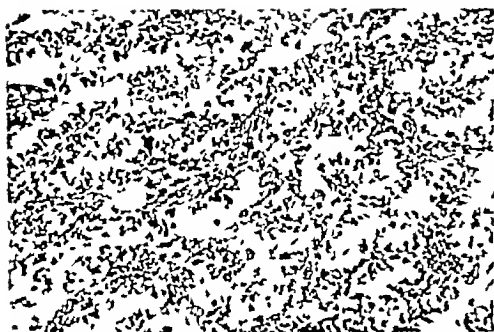


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Diagnosis Papillary adenocarcinoma of the left kidney.

Case 3—R. L., man aged 38, had a chief complaint of hematuria beginning about April 8, 1930. He passed bright red blood without pain, and the bleeding continued on and off. On April 13 he developed a dull pain through the left side of the abdomen in the left kidney area. A large irregular mass was felt in this area. Pyelogram showed a distortion of the left renal pelvis. Left nephrectomy was performed. Almost the entire lower pole of the removed left kidney was occupied by a fist-sized hemorrhagic tumor which had broken

gram showed an ulcerative lesion involving the upper pole of the left kidney. This apparently was due to a new growth. Nephrectomy (lumbar) was done on February 12. The kidney showed a lemon-sized, encapsulated, pale yellow, cystic tumor located between the upper and middle third. The tumor infiltrated the neighboring kidney tissue and broke into the pelvis. An extensive course of x-ray therapy was given after nephrectomy. Patient is alive in April, 1939, but has diabetes.

Histology This tumor was multicystic, and



FIG 5 CASE 9 Papillary cystocarcinoma. The papillae are covered mainly by one layer of tumor cells

the cysts were filled with papillae. There were one large cyst and numerous small ones arranged about it and connected with it. The connective tissue papillae were covered by one or two layers of tumor cells. Atypicity was moderate (Fig 5). This was the structure in every part of the tumor.

Diagnosis Papillary cystocarcinoma of the left kidney

Case 10—E H, man, aged 51, was admitted on December 10, 1936. About three days before admission this patient had pain in his left side. On the next day during a painless urination, he was astonished to see that the urine was as red as 'cherry juice.' Since that occasion the urine had been consistently bloody.

Cystoscopy was done on December 11. The left kidney was pumping gross blood. An x-ray of bilateral pyelogram showed, on the left side, a lack of filling and irregularity of the upper calyx and some elongation of the calices of the lower pole. Nephrectomy was performed on December 13. The removed kidney was only slightly larger than normal, was arteriosclerotic and in addition showed a walnut sized hemorrhagic tumor and several black pepper to marble sized grayish-yellow



FIG 6 CASE 11 Adenocarcinoma of kidney reproducing adult tubules

tumors located in the cortex. There was some blood in the kidney pelvis.

Histology The large hemorrhagic tumor presented the structure of papillary and cystic adenocarcinoma. The papillae were covered with one or two layers of tumor cells. The neighboring kidney tissue was infiltrated with blood. The other tumors, all located in the subcapsular region of the cortex, showed papillary adenomatous and papillary cystomatous structure. Patient is well in April, 1939.

Diagnosis Papillary and cystic adenocarcinoma of sclerotic kidney, also multiple papillary adenomas of the left kidney

Case 11—W J L, man, aged 61, was admitted on May 7, 1937. At Christmas time in 1936 he had a severe dragging pain low down in the bladder, persisting for several hours. He went to the toilet and passed many dark clots of blood which filled the bowl of the closet. In March, 1937, a second more profuse discharge occurred. The pains were confined to bladder and penis. Many dark clots were passed. He had lost 35 pounds in the previous five months. Cystoscopy, three weeks prior to admission, revealed tumor of the left kidney. On May 8, nephrectomy was performed. The kidney was enlarged—14 by 7 by 8 cm. The upper half was occupied by a compact, grayish-white tumor mass. There were a few degenerated and some hemorrhagic areas. The hilus of the kidney showed a few tumor masses.

Histology Parts of the tumor showed typical, orderly adenocarcinomatous structure, reproducing adult tubules (Fig 6). The greater part, however, was composed of large atypical tumor cells forming no obvious tubular structures. Perithelomatous formations were quite frequent in such areas and mitotic figures could be found in almost every field. Several veins of the hilus were filled with tumor thrombi. The chest film before nephrectomy showed no



FIG. 3 CASE 6 Probably real hypernephroma. The slightly granular tumor cells are arranged in narrow cords. There is no evidence of lumens.

there was fibrosis and cystic degeneration.

Histology The tumor cells were slightly granular and they were arranged in narrow cords. Thin blood vessels separated the cords. Lumens were not seen in any part of the sections. Patient is living and well at present—over seven years after nephrectomy.

Diagnosis Probably real hypernephroma of the right kidney (Fig. 3).

Case 7—D. G., man, aged 50, was first admitted on July 20, 1933, and was discharged on July 29, 1933. He was admitted with the history of intermittently passing blood clots since March, 1933. Cystoscopy revealed lack of right renal function. Pyelograms showed a filling defect in the upper part of the right ureter, thereby suggesting a malignant lesion involving the right kidney and ureter. An x-ray of the chest revealed a probable metastatic nodule in the right base. Patient was treated with deep x-ray therapy.

Diagnosis Inoperable hypernephroma—right.

His second admission was on December 5, 1933. During November this patient had been getting weaker with lapses of rationality. There was difficulty in swallowing, and he fell several times. He was totally blind. He was admitted in comatose condition and died the same day.

Postmortem The right kidney weighed 1,020 Gm., and it was occupied almost entirely by a firm, grayish-white tumor. The vena cava and the kidney pelvis were infiltrated by tumor masses.

Histology Parts of the tumor showed adenocarcinomatous structure. Other areas presented large groups of tumor cells, without lumens, and also peritheliomatous structures.

The tumor cells were quite atypical, and mitotic figures were frequent.

Diagnosis Carcinoma of the right kidney with adenocarcinomatous and peritheliomatous areas.

Case 8—S. R., man, aged 68, was admitted on January 31, 1935. The patient stated that for some time he had been passing blood in the urine, enough to be easily seen. There was a slight loss in weight. Cystoscopy and bilateral pyelogram were done. Bloody urine was obtained from the left kidney. An x-ray showed



FIG. 4 CASE 8 Alveolar carcinoma of kidney.

elongation of the middle calix of the left kidney suggestive of a new growth. Nephrectomy of the left kidney was performed on February 4 through lumbar incision. After nephrectomy, abundant x-ray therapy was given. Almost the entire lower half of the left kidney was occupied by an orange-sized tumor mass, which seemed to be composed of multiple, pale, tannish yellow, hemorrhagic nodules. The nodules varied a great deal in size. There was much fibrosis surrounding the nodules. The pelvic mucosa was hemorrhagic, but the tumor did not break into it.

Histology The tumor cells were stained fairly dark, but many showed vacuoles in the cytoplasm. There was a well-defined alveolar arrangement. In addition, there was marked vascularity with frequent peritheliomatous structure (Fig. 4). Mitotic figures were frequent, and tumor cells were found in a few blood vessels. The patient died during February, 1938, death being clinically due to metastases. Postmortem was not obtained.

Diagnosis Alveolar carcinoma of the left kidney.

Case 9—E. T., man, aged 57, was admitted on February 4, 1935. The patient had been in the hospital on several occasions during the previous few months for cystoscopy and a study of the cause of painless hematuria. Pyelo-

sign, particularly with papillary and cystic tumors. In such tumors hemorrhage occurs into the cysts with considerable frequency. The blood will rupture the cyst wall, will infiltrate the renal tissues, and force its way into the pelvis. Such a picture was encountered in the material presented here.

Cystoscopy and pyelographic studies were of great value and the observations were confirmed by the presence of tumors in the removed kidneys. Pain and palpable tumor mass were less frequent and less important in this series of cases than was hematuria. Weight loss and general malaise were often observed, but naturally these symptoms were only of secondary importance.

Although x-ray treatment was given in several of the cases, there was not sufficient evidence in this series to support its value. The case of Wilms' tumor (Case 13) was heavily irradiated, but this did not prevent the bulky recurrence and the formation of metastases. Pre-operative irradiation of massive tumors as done by Wharton¹⁴ was not attempted.

The gross appearance of the probable real hypernephroma (Case 6) was different from that presented by the carcinomas. It showed a fibrous central area surrounded by a yellow, cellular cortical zone, emphasized by Grawitz and re-emphasized by Ewing to be an important feature of adrenal rest tumors. The microscopic appearance (Fig. 3) with the cellular cords and without any lumens also supported the probable adrenal origin of this tumor. The most remarkable feature is, however, that this patient is still alive over seven years after nephrectomy.

The gross features of the carcinomas varied considerably, but the macroscopic appearance was not a sure way of recognizing the underlying histologic pattern, nor can conclusions be drawn from this appearance with regard to prognosis. However, the histologic structure had much more to offer. The following histologic patterns were seen: (1) glandular structures often reproducing adult tubules, (2) papillary glandular struc-

tures, (3) papillary cystic pattern, either multiple or single, (4) alveolar arrangement, and (5) peritheliomatous architecture.

These various histologic patterns appeared either alone in the same tumor or two or three histologic patterns were present in different parts of the same tumor. The uniformity or the variation of structural pattern seemed to be of great importance as related to occurrence of metastases and to prognosis.

It was found that an orderly glandular, papillary glandular, or papillary cystic structure or a pattern reproducing adult tubules throughout the tumor was indicative of a relatively benign carcinoma of the kidney. Such tumors (Cases 1, 2, 5, 9, and 10), in spite of their eventual large size and in spite of occasionally destroying almost the entire kidney, remained without metastases. Broders' grading of cancer cells has been well utilized when either one of the above three patterns was observed uniformly in every part of the tumor. In Case 12 there was a papillary structure throughout, but the tumor cells were atypical, indicating a higher grade of malignancy, and multiple metastases occurred.

A high grade of malignancy was observed with the alveolar carcinoma (Case 8) and particularly when the tumors showed areas with peritheliomatous pattern (Cases 3, 4, 7, and 11). The presence of such structures in a kidney tumor indicated an unfavorable prognosis.

When metastases were formed they occurred especially into retroperitoneal lymph glands, lungs, bones, and brain. The metastasizing cases were those with atypical malignant structures. Extension by lymph vessels was seen in 1 instance (Case 12), while the other metastasizing cases occurred probably by the way of blood vessels.

The character of the cytoplasm, either the clear or the granular type, did not seem to have much bearing on prognosis in this series. Many authors have pointed out that several different parts of kidney tumors have to be sectioned in order to find the basic character of these neo-

evidence of tumor metastases to the lungs. Another one, however, made on August 18 showed tumor metastases to the lungs. The patient died during November, 1937—not in the hospital. Autopsy was not obtained.

Diagnosis Carcinoma of kidney with adenocarcinomatous and peritheliomatous structures.

Case 12—J W, man, aged 60, for the previous six months had had progressive weakness, weight loss, and loss of appetite. He had a mass about the size of a lemon halfway between the xiphoid and the umbilicus and just to the right of the midline. A pea-sized, hard node was found in the left supraclavicular fossa. He was thought to have a malignant tumor of the stomach. A very small amount of blood was found in his urine during the last days of his life. He died with progressive weakness, and postmortem showed a primary carcinoma of the right kidney. A small lemon-sized, firm, reddish-gray tumor occupied the greater part of the upper pole of this kidney. The tumor invaded the pelvis, and a part of it projected into the pelvis as a papillomatous mass. There were large carcinomatous metastases to the upper retroperitoneal lymph glands of the right kidney region, to the abdominal periaortic lymph glands, to the lymph glands of mesentery and transverse mesocolon, and to the posterior mediastinum and peribronchial lymph glands. There was carcinomatous peritonitis of the right kidney region.

Histology Parts of the tumor showed orderly adenocarcinomatous arrangement with reproduction of adult tubules. The greater part, however, showed a papillary and cystic adenocarcinomatous structure with multilayered, large atypical tumor cells. Numerous lymph vessels were injected with tumor cells.

Diagnosis Papillary cystocarcinoma with high-grade malignancy and with carcinomatous lymphangitis.

Case 13—D H, boy, aged 2½, had a history of illness dating back only a few days. His mother noticed hematuria, restlessness, anuria, and general malaise. The child had had a protuberance of the abdomen since birth. The first admission was on December 25, 1934. At this time an orange-sized mass was felt in the region of the right kidney. X-ray showed a shadow in the right side suggesting tumor of the kidney. On March 1, 1935, nephrectomy was performed. A lemon-sized, apparently well-encapsulated tumor was found, which originated between the middle and lower pole of the kidney.

Histology Embryonal adenomyosarcoma of kidney. X-ray treatment was given. On May

2 the x-ray showed no metastases to lungs.

Second admission was on September 20, 1935. At this time the chief complaint was progressive enlargement of the abdomen and nausea. There was a definite mass in the right side. He died September 25, 1935.

Postmortem findings Recurrent adenocarcinoma, metastases to liver and right lung, infiltration of right lobe of liver and of muscles in right iliac fossa.

Discussion

Although the above series of cases is far from being enough for dogmatic conclusions, nevertheless it seems to be of real value. It supports and emphasizes some well-known clinical points encountered in cases of kidney tumors. In addition, the observed microscopic features have definite bearing on the renal origin for the large majority of the examined tumors, thereby supporting the view of those investigators who expressed a similar opinion. Furthermore, it is my belief that the histologic structure of the tumors had definite relationship to prognosis and to the future course of the patients.

Among the well-known clinical symptoms the most important and most frequent was spontaneous hematuria, which focused attention to the genitourinary tract. There was only 1 case (Case 12) in which blood was found only in microscopic amounts and a genitourinary origin of the tumor was not suspected. It is imperative, therefore, to do a thorough investigation of the entire genitourinary tract in cases of hematuria, because only an untiring search will discover the cause of the hemorrhage that may be a kidney tumor. This will give the physician a chance to remove it at the earliest possible stage, which at that time may already be an advanced stage. Therefore an early diagnosis of kidney tumors should be the aim just as much as it is with tumors of other organs.

Hemorrhage may be a late or an early sign. It may be a late sign in cases of large, compact, not very vascular tumors which usually have to break into the pelvis before hematuria will occur. On the other hand, it may be a fairly early

Discussion

Dr A. A. Thibaudeau, *Buffalo, New York*—A review of the malignant tumors studied at the State Institute shows a total of 98 neoplasms. These have recently been re-examined and re-classified as follows: hypernephromas, 39-42, carcinomas, 39-42, embryonal carcinoma in children, 6-5, epithelioma of kidney pelvis, 3-2 5, metastatic growths, 3-2 5, and sarcomas, 8-6 per cent.

Among the hypernephromas 7 5 per cent of recoveries were noted, while among the carcinomas 13 per cent recoveries were recorded. This shows a variation from the percentage found in Dr Gáspár's series. While it is admitted that there is wide divergence of opinion as to the proper classification of certain kidney tumors, our laboratory has for some time adhered closely to the classification used by Ewing in this type of neoplasm, and we have for a long time urged the separation of the adenocarcinoma of the kidney from the hypernephroma group.

Of the group of five embryonal carcinomas 1 patient has been well for more than five years while the other 5 are dead or show at present widespread metastases.

In the diagnostic laboratory of the Institute 182 cases of kidney neoplasms have been examined. These contain hypernephromas, 71-43 5, carcinomas, 60-37, epithelioma of kidney pelvis, 20-12 5, and sarcomas, 11-7 per cent.

This group did not include the embryonal kidney tumors in children, 19 of whom were examined. In this latter group the age varied from three months to eight years, with an average age of 4 years. Twelve patients were girls and 7 were boys, a proportion of almost 2 to 1 in favor of the girls.

In the adult group above described 85 per cent of the patients showed the disease in the fifth, sixth, and seventh decades with the sixth decade alone accounting for 40 per cent of the total. In this group, moreover, there are 102 men and 60 women. It will be noted that this proportion almost exactly reverses that found in our series of embryonal tumors of children.

A comparison of the two series of cases reported above will show a very close approach of percentages of the tumors falling in each group. This is significant because the reviews were independently made and each group contains a sufficient number of cases to be important.

DOCTOR'S EDUCATION 'TOO LONG AND TOO SHORT'

I question the practicalities of the present pursuit of the degree of Doctor of Medicine, which follows a course of education which is too long and too short, a course which is more heavily loaded than is required for any other professional degree, too long to permit the student to enter practical life in his best years and too short to feed him the special fundamental knowledge he should possess before he steps into his public service.

Eight years of required college work brings the average student to 26 or 27 years of age before he leaves school. Then he must have two years of hospital work to learn the practical application of some of the facts he has learned. He will then be 29 or 30 years old before he may be permitted to earn his living through professional work. I do not believe that four years of medicine is too long or long enough, but I believe that some procedure should be evolved to bring the physician earlier into practice. Possibly he might be well prepared for his peculiar life by giving him six years of scientific and medical education, omitting all frills and specialty teaching and concentrating on practical general medicine and minor surgery and traumatism and obstetrics in order to give him the best preparation for the average care of the average patient.

Internships are most valuable opportunities to learn practical medicine. The patients are human beings who represent the average of clinical experience. If the intern is wise he will think of them as prototypes of the patients he hopes to have. He will study each one as an individual

he will try to learn something of his biologic inheritance and his social experience, he will not classify him as a case of this or that disease but as a person suffering from a disease, he will not treat a disease but he will treat the patient. If he will always do this he will come to know people and such knowledge will attract people to him.

Concentration of medical education into six years of scientific study will, of course, be criticized by the advocates of broad culture, which they claim is necessary to the joy of living and the understanding of human problems. I believe, however, that giving the physician as clear a vision of the physiology of life as possible would be the best equipment for him to apply as a scientific approach to the treatment of sick people, who will in their turn educate him in the real values of public service.

If the physician has a flexible intelligence he will no doubt, follow an inclination toward some satisfactory hobby. A surprising number of physicians have found delight in the pursuit of the charms of music, many have recently exposed to public view their accomplishments in the fields of painting and sculpture, many have found leisure for the refreshment of outdoor sports and the pursuit of studies in natural history.

Culture will bless the physician if he desires it, but his chief satisfactions will come from his efforts to help people who are suffering from the incapacities of sickness.—*Nathan B. Van Ellen, M.D.* presidential address before the A. M. A.

plasms In addition, as it was presented above, the varying pattern of the tumors may reveal areas that can be of extreme importance in formulating an opinion as to the future life of the patient

A large majority of the tumors showed, at least in some areas, essentially a glandular and papillary character This was insisted upon by Stoerk¹¹ and was emphasized by a score of authors, Wright,¹⁶ Ewing,⁴ Whitmore,¹⁴ Crawford,^{2,3} and others Without going into much detail in the question of whether adult renal tubules or, as suggested by Wilson,¹⁵ retained islets of nephrogenic tissue gave rise to these tumors, I will say that the preponderance of glandular, papillomatous, and cystic structures definitely pointed toward an origin from the kidney and not from the adrenal As pointed out particularly by Ewing,⁴ papillomatous structures never do occur in adrenal tumors

It is my opinion that further study of kidney tumors is necessary clinically as well as pathologically Smaller series, investigated carefully and thoroughly by one competent man, may mean more than reports on hundreds of cases The magnitude of the task to analyze such large numbers with minute detail seems to be a problem that is beyond one man's power

Summary and Conclusions

In this series of malignant kidney tumors there was only one out of thirteen that was probably a hypernephroma

The great majority of tumors showed adenocarcinomatous structure with or without papillae, including some with papillary cystocarcinomatous pattern, thereby indicating the overwhelming preponderance of malignant tumors originating from renal elements Therefore, in agreement with other students of this subject, it would be much less confusing if the term "hypernephroma" were used to designate only those originating from adrenal rests

Clinical diagnosis was made fairly promptly, but in spite of this, many of the

tumors were already large when clinical symptoms were observed It seems that the very unfavorable prognosis of renal carcinomas is due, at least in part, to the late occurrence of clinical symptoms and that an early diagnosis cannot be made with our present methods In most instances the kidney tumor has to reach the pelvis in order to cause symptoms, particularly hematuria, and at that time the malignant tumor may be quite advanced.

The renal carcinomas were definitely malignant, but some showed more malignancy than others The histologic evidence of atypicity was often connected with early formation of metastases Atypical character was manifested not only by the cells themselves but at least equally so by alveolar formations and by the admixture of perithelomatous structures

A thorough histologic examination of various parts of the tumors is urged in order to shed some light on the future course of patients with renal carcinomas X-ray treatment did not seem to alter the course either of the renal carcinomas or of the embryonal renal sarcoma (Wilms' tumor)

The real typical hypernephroma with orderly histologic structure seems to offer a much more favorable prognosis than renal carcinomas

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dominal organs did not stop bilirubin formation. Haldeman⁴ confirmed this fact by another technic. He injected laked blood intravenously, and by means of the prussian blue reaction for iron he was able to show in which tissues the hemoglobin was converted into bilirubin with the liberation of iron. Within an hour there was a marked deposition of pigment in the reticulo-endothelial cells of the bone marrow which steadily increased in amount, while the liver and spleen showed only slight blue color which did not continue to increase very much in amount.

Fundamentally, jaundice may be considered as the result of any one of a variety of pathologic mechanisms, each one of which may cause an increase in the bilirubin concentration of the blood serum. These mechanisms may be briefly enumerated as follows:

1. Whenever an excessive destruction of the red blood cells exists, more bilirubin is brought to the liver cells than can be excreted by them, and as a result of this an increased concentration of bilirubin in the blood stream occurs.
2. During toxic or anoxic conditions the liver cells possess a diminished ability to excrete the usual amount of bilirubin brought to them, and as a result of this the bilirubin concentration of the blood stream gradually increases beyond the normal limits.
3. Those conditions under which a combination of the above two mechanisms are involved may cause jaundice. The jaundice that results from any of the above causes has also been referred to as the retention or nonobstructive forms of jaundice.
4. Whenever obstruction of the bile passages occurs, the normal amount of bilirubin brought to the liver cells and excreted by them is unable to escape into the intestinal tract in sufficient amount and is therefore reabsorbed into the blood stream with the resultant production of jaundice. In this group are included such obstructive lesions as calculus, stricture, suppuration, or carcinomatous involvement of the common or hepatic bile ducts and also obstruction due to carcinoma of the head of the pan-

creas. There is another group of cases, however, that Rich⁵ has also included under the heading of regurgitant jaundice and which are sometimes referred to under the more appropriate general heading of resorptive jaundice. These behave very much like cases of obstructive jaundice except that they are not due to any of the above-mentioned obstructive lesions. Their pathology is confined to intrinsic damage of the liver either as a combination of atrophy of the liver cells and increase of the fibrous tissue or to some other encroachment as carcinomatous infiltration of the organ. From the practical point of view all of these cases together with those included in Group 4 belong under the common heading of resorptive jaundice. The important and significant fact, however, which must not be overlooked is that although the jaundice resulting from obstructive lesions is due to resorption not all cases of resorptive jaundice are necessarily the result of any of the above-mentioned types of obstruction. From the biochemical point of view it must also be emphasized that the blood in these cases of resorptive jaundice contains all the elements of the bile, i.e., bile salt, bilirubin, and cholesterol, while in the cases of retention jaundice the blood contains pure bilirubin.

Differential Origin of Bilirubin

The next important and interesting observation in the study of jaundice was that of Van den Berg in 1918. He stated that there are apparently two forms of bilirubin in existence. This he predicated upon the fact that under certain conditions bilirubin in the serum gave an immediate reaction when brought in contact with the Diazo reagent, while under certain other conditions serum-containing bilirubin gave this reaction only after the addition of alcohol. The first reaction he designated as the direct immediate, while the other one requiring the addition of alcohol he designated as the indirect reaction. This difference in the response on the part of bilirubin to the Diazo reagent seems to depend upon what hap-

JAUNDICE

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JAUNDICE may be defined as a condition in which the bilirubin concentration of the blood serum is increased. Many of us have been faced with the perplexing diagnostic problem presented by a case of jaundice. The constant and difficult question to answer is whether the particular case of jaundice is one that can be relieved by surgical means or by purely medical procedures. It is only by a thorough and complete understanding of this subject that one may be in a better position to make such a decision. The present report consists of a study of 125 cases of jaundice.

Pathology

Our true conception of jaundice really began with the researches of Mc Nee,¹ who produced some interesting experiments in 1913 while working in Aschoff's laboratory. These observations revealed two very important facts—first, that it is the Kupffer cells and not the hepatic epithelial cells which are concerned in the production of bile pigment, and second, that these Kupffer cells are scattered irregularly along the walls of the hepatic sinusoids and are merely a part of the reticulo-endothelial system, which in mammals is concentrated for the most part in the spleen and bone marrow. Mc Nee's conception, therefore, was that bile pigment was formed from hemoglobin by the reticulo-endothelial cells and that, as far as the parenchymatous cells of the liver were concerned, they merely acted in an excretory capacity.

Whipple and Mann,² at about the same time, offered further experimental proof that, under pathologic conditions at least, the vast bulk of the bile pigment is formed outside of the liver. The liver cells excrete this bile pigment brought to them just as the epithelial cells of the kidney excrete the urea carried to them by the blood.

With regard to the bilirubin itself it may be stated that it is formed whenever and wherever hemoglobin is broken down either by the action of the reticulo-endothelial cells, by toxic agents, or as the result of the absorption of hemorrhagic areas in tissues with the liberation of iron during the process. Hemoglobin taken up from the blood stream by the phagocytic cells which are anchored within the capillaries of the liver, spleen, or bone marrow is split within these cells into bilirubin and a colorless iron-containing residue. Both of these substances are discharged into the blood stream. The bilirubin as it passes through the capillaries of the liver is selectively taken out of the blood by the epithelial hepatic cells and is excreted, as a threshold substance, into the bile canaliculi, whence it flows as part of the bile secretion through the biliary ducts into the duodenum. Most of the pigment reaching the intestines is reduced there to urobilin by the action of bacteria. Some of the urobilin is excreted in the feces and some absorbed into the blood stream. Under normal conditions most of the urobilin absorbed into the blood stream is removed by the liver to be excreted in the bile or to be conserved for unknown purposes. Under certain conditions the liver becomes unable to remove it efficiently from the blood stream and quite large amounts may pass from the blood to the urine.

Mann³ and his co-workers further showed by means of spectrophotometric determinations of the bilirubin concentration in the veins of various organs that the bulk of the bilirubin is formed in the bone marrow and that the amount produced by the liver and spleen was comparatively insignificant. He further found in support of this contention that the removal of the spleen, liver, and all the ab-

dominal organs did not stop bilirubin formation. Haldeman⁴ confirmed this fact by another technic. He injected laked blood intravenously, and by means of the prussian blue reaction for iron he was able to show in which tissues the hemoglobin was converted into bilirubin with the liberation of iron. Within an hour there was a marked deposition of pigment in the reticulo-endothelial cells of the bone marrow which steadily increased in amount, while the liver and spleen showed only slight blue color which did not continue to increase very much in amount.

Fundamentally, jaundice may be considered as the result of any one of a variety of pathologic mechanisms, each one of which may cause an increase in the bilirubin concentration of the blood serum. These mechanisms may be briefly enumerated as follows: 1. Whenever an excessive destruction of the red blood cells exists, more bilirubin is brought to the liver cells than can be excreted by them, and as a result of this an increased concentration of bilirubin in the blood stream occurs. 2. During toxic or anoxic conditions the liver cells possess a diminished ability to excrete the usual amount of bilirubin brought to them, and as a result of this the bilirubin concentration of the blood stream gradually increases beyond the normal limits. 3. Those conditions under which a combination of the above two mechanisms are involved may cause jaundice. The jaundice that results from any of the above causes has also been referred to as the retention or nonobstructive forms of jaundice. 4. Whenever obstruction of the bile passages occurs, the normal amount of bilirubin brought to the liver cells and excreted by them is unable to escape into the intestinal tract in sufficient amount and is therefore reabsorbed into the blood stream with the resultant production of jaundice. In this group are included such obstructive lesions as calculus, stricture, suppuration, or carcinomatous involvement of the common or hepatic bile ducts and also obstruction due to carcinoma of the head of the pan-

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pens to it when it passes through the liver cells. Before passage through the liver cells the bilirubin is in a certain physicochemical state possibly in combination with the plasma proteins, in which form linkage with the Diazo reagent cannot occur without the assistance of alcohol. The passage through the liver cells seems to render the bilirubin free to link up with this reagent at once. Thus, for example, bile obtained from the gallbladder gives an immediate direct reaction, while increased bilirubin concentration of the serum resulting from absorption of hemorrhagic areas or infarcts gives the indirect reaction.

Relationship Between Bile and Glycogen Formation in the Liver

Forsgren⁶ has reported some very interesting observations upon the relationship between bile and glycogen formation in the liver. Using rabbits, he found that in the normal animal a cycle existed during which the percentage of glycogen and bile varied inversely to each other. Thus, the glycogen was low when the bile was greatest in amount and vice versa. He also found that glycogen was first deposited around the central vein of the lobule and remained there the longest, while the bile was mostly concentrated in the periphery of the lobule. Thus, one can readily see that if conditions similar to those found by Forsgren in the normal rabbit should exist in the jaundiced animal or patient, it would explain very well why a decreasing glycogen content of the liver follows upon biliary obstruction. Such a condition was actually found to exist in the experimental work of Varela, Duomarco, and Munilla,⁷ who reported that after the experimental production of jaundice by ligation of the common duct, a marked reduction in the glycogen content of the liver resulted. Ravdin,⁸ basing his opinion on some experimental observations, reported that he found an average of 5.5 Gm. per 100 Gm. of liver in the normal dog, while the liver of dogs with obstructed bile ducts (nine animals) contained only 1.4 Gm. of glycogen per 100 Gm. of liver.

Behavior of Various Types of Jaundice to the Administration of Dextrose

It has been noticed by many observers that certain types of jaundice cases are associated with rather low blood sugars while others are accompanied by increased blood sugar values. Thus, in cases of severe toxic jaundice that go on to acute yellow atrophy, the fasting blood sugars have a tendency to be very low, and some of the lowest figures have been obtained in the fatal cases. Meulengracht reported finding a characteristic low fasting blood sugar value in a large percentage of his cases of catarrhal jaundice. After the administration of 50 Gm. of dextrose, these cases developed a normal hyperglycemia with a subsequent marked hypoglycemic phase. In 3 cases terminating in death with the characteristic clinical picture of acute yellow atrophy of the liver, he found extremely low fasting blood sugar levels. Ferguson,⁹ on the other hand, found that after removal of the gallbladder and ligation and section of the common duct in dogs the peak of the sugar tolerance curve following dextrose administration became progressively higher and also had a tendency to be later in appearance as the jaundice increased. Lande and Pollack¹⁰ have reported several cases of jaundice with hyperglycemia and glycosuria that were rather difficult to control with diet and fairly liberal doses of insulin. With the relief of the obstructive jaundice by surgical means there was a complete restoration to normal of the carbohydrate function in all these cases.

Mechanisms Involved in the Production of Jaundice

Many of the difficulties encountered in our clinical studies of jaundice cases are principally due to our lack of appreciation as to the underlying mechanism involved. I think that the problem could be approached more sensibly by the separation of all jaundice cases under two main headings: (1) retention jaundice and (2) resorptive jaundice.

Retention Jaundice

Retention jaundice refers to the in-

crease in the circulating bilirubin that is brought about by causes other than obstructive lesions of the common duct or intrinsic lesions of the liver. Under this heading may be included the following case classification:

1 Cases showing hemolysis of the red blood cells—(a) hemolytic jaundice, (b) pernicious anemia, (c) splenomegalic hemolytic anemia, (d) sickle cell anemia, (e) acute infectious diseases associated with increased red blood cell destruction, (f) icterus neonatorum, (g) infarctions, and (h) Weil's disease.

2 Conditions that cause an anoxemia of the liver cells—(a) cardiac decompensation, (b) toxic hepatitis resulting from the toxic action of such drugs as arsphenamine, chloroform, phosphorus, etc., or from hematogenous infections, and (c) anoxemia due to the occurrence of pulmonary infarctions.

Thus, it is noted that just like retention in the case of any other organ retention jaundice signifies (1) that an increased amount of bilirubin is being brought to the liver cells far beyond their capacity to excrete normally, and (2) that as the result of some injury to the liver cells there exists a diminished ability of the cells to excrete the normal amount of bilirubin brought to them.

The bilirubin that accumulates in the circulation as a result of these changes is in the pure form bound in some way to the plasma proteins. It has been noticed that the bilirubin in this form does not pass very readily through the kidney. Clinically this is borne out by the fact that hemolytic bilirubin does not pass into the urine until the concentration becomes very high and Van den Berg is of the opinion that bilirubin of the pure hemolytic jaundice never appears in the urine. Likewise the bile salts are absent from the urine in cases of retention jaundice. Urobilin, however, is present in the urine to a considerable extent. This is also found to be increased in the feces in this form of jaundice. The fact that the bilirubin is combined with the plasma proteins may possibly explain why the addition of alcohol becomes

necessary in producing the reaction with the Diazo reagent. In other words, hemolytic type of bilirubin gives either the indirect or the delayed direct Van den Berg reaction. Sometimes a mixed reaction is obtained in the form of a reddish color slowly deepening to a violet. This indicates that both types of bilirubin are present, and it is the more usual reaction seen in the toxic forms of jaundice.

Resorptive Jaundice

In the resorptive or regurgitant (Rich) jaundice, the bile is excreted by the liver cells but it succeeds in re-entering the blood stream. Under this heading may be included the following types of cases:

1 Obstructive jaundice—(a) calculus in common duct or ampulla of Vater, (b) stricture of the common duct, (c) marked suppuration of the common duct, (d) carcinoma of the common duct, (e) extrinsic pressure from glands, scar tissue, or carcinoma of the head of the pancreas.

2 Intrinsic hepatic disease—(a) cirrhosis of the liver, (b) carcinomatous involvement of the liver, (c) abscess of the liver.

3 Toxic liver damage.

It is thus seen that while all cases of obstructive jaundice are resorptive not all cases of resorptive jaundice are obstructive. In resorptive jaundice the entire contents of the bile canaliculi, i.e., the whole bile consisting of bilirubin, bile salts, and cholesterol, enter the blood stream. The bile salts are the most toxic factor in the bile. They change the surface tension of the cells and probably alter normal cell metabolism, as well as cause the pruritis that may be such a distressing feature. The bilirubin and bile salts appear very quickly in the urine. The urobilin in the feces is decreased or absent. The Van den Berg reaction is the direct immediate. In those cases where the obstruction is complete, the characteristic clay colored stools will persist, and this serves as a good clinical observation never to be lost sight of.

It will be noticed that in the above classification cases of toxic liver damage, as seen in arsphenamine poisoning, acute

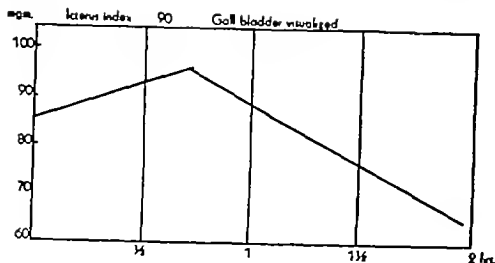


FIG 1 Sugar tolerance curve

yellow atrophy, and acute infectious jaundice, have been classified as occurring both under the retention jaundice, because of the hemolysis of the red blood cells incident to the toxic process, and under the anoxemia of the liver cells. With the progress of this pathologic lesion, however, actual rupture of the bile canaliculi occurs with the resorption of their contents into the blood stream. As a result of this combined pathologic lesion this group has really been the stumbling block in the differentiation of clinical cases into the obstructive and nonobstructive jaundice groups.

Clinical Grouping of Jaundice Cases

From the point of view of really understanding the mechanism of the type of jaundice present in a particular case, the above-mentioned classification is very useful and important. From the clinical and diagnostic point of view, however, a more practical grouping may be arranged. In this our prime object is to be able to separate the so-called surgical cases from the medical ones. The following groups have been found suitable for this purpose. 1 The toxic group—this includes all those cases of jaundice produced by the action of such toxic substances as arsphenamine, cinchophen, etc., the infectious (catarrhal) jaundice, and acute yellow atrophy. 2 The obstructive group—this may be arranged under two subgroups. (A) includes those cases of jaundice arising as a result of cholelithiasis with stone in the common duct or ampulla of Vater, and blocking of the common duct and bile passages as the result of stricture or suppuration, and (B) those cases of jaundice arising as a re-

sult of carcinoma of the head of the pancreas or common duct. 3 The intrinsic hepatic group—this consists of cases of jaundice arising as the result of such pathologic changes as cirrhosis, primary or secondary carcinomatosis, or abscess of the liver. 4 The hemolytic group—this includes such diseases as hemolytic jaundice, pernicious anemia, icterus neonatorum, etc. 5 The undetermined

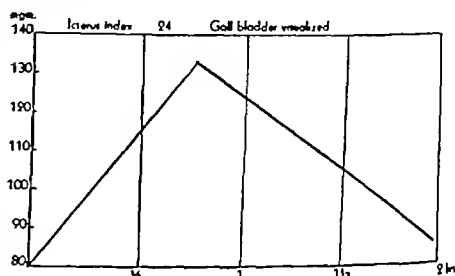


FIG 2 Sugar tolerance curve

group—this includes cases of jaundice due to absorption from large hematomas, infarcts, or as a result of cardiac decompensation.

Determination of the Degree of Icterus

There are two procedures that have been advocated for the detection of the degree of icterus, the quantitative Van den Berg and the icterus index tests. Of these two the Van den Berg gives the more accurate results because of the fact that such interfering substances as carotene and lipochrome are eliminated in this procedure. The procedure most widely employed for determining the quantitative Van den Berg is that suggested by Thannhauser and Andersen, which minimizes the error incident to absorption of bilirubin by the protein precipitate in serums containing large quantities of bilirubin, particularly in obstructive hyperbilirubinemia. The normal figures with this method may be considered as 0.5 mg per hundred cubic centimeters of serum or plasma, with an upper limit that may be as high as 0.8 mg. This method is the only means we have of detecting a latent jaundice. Values above 10 mg of blood serum are extremely rare,

while values above 6 mg are unusual in hemolytic or retention jaundice. The icterus index furnishes a practical method for determining the degree of icterus. This procedure is based upon the observations originally reported by Meulengracht. Such substances as carotene and lipochrome, however, interfere with the results. The normal values are usually considered from 4 to 6. Values from 7 to

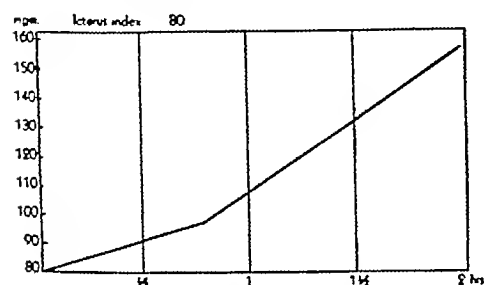


FIG 3 Sugar tolerance curve

15 are obtained in the so-called cases of latent jaundice.

Liver Function Tests and Their Diagnostic Value

Unfortunately, the various procedures that have been advocated to measure the functional capacity of the liver have at times also been employed diagnostically in an attempt to distinguish clinically obstructive from nonobstructive cases of jaundice. These tests, however, can only be relied upon to determine whether or not the particular jaundice is associated with liver damage. The functional capacity of the liver is such that some observers have demonstrated that as much as 90 per cent of the organ may be destroyed experimentally without showing any evidence of functional impairment. Such procedures as the blood phosphatase, total and free cholesterol, fibrinogen, various dyes, levulose and galactose tests can only be expected to show the presence of functional hepatic impairment. Where such procedures have been advocated as a means of differentiating between obstructive and nonobstructive jaundice, they have yielded disappointing results.

Bromsulphalein Test—Of all the dye

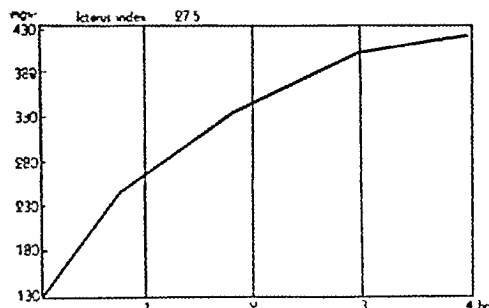


FIG 4 Sugar tolerance curve

tests that have been advocated for detecting impairment in liver function the bromsulphalein is the best to employ. At the end of one-half-hour period there should be no dye left in the blood stream in the absence of liver damage. This test seems to be particularly striking in the severe toxic jaundice, arsphenamine and chloroform poisoning, and acute yellow atrophy. In cirrhosis and carcinoma the results are much more variable because of the fact that in these conditions there are frequently enough normal cells left to excrete the dye.

Levulose Test—This test is based upon the fact that levulose is stored in the liver as rapidly as it is absorbed from the intestinal tract, and it was for this reason that Strauss in 1901 advocated its use as a functional test which he thought would enable one to differentiate between the obstructive and toxic cases of jaundice. This, however, has not proved to be the case. The usual method is to allow 40 Gm of levulose by mouth and follow the blood sugar rise for several hours. In cases of diffuse liver damage the blood sugar curve is unusually high, with the peak at the one-and-one-half to two-hour period.

Galactose Test—This sugar may be used instead of the levulose and here the urinary findings are followed. When 40 Gm of the galactose is given by mouth, a loss of over 1 Gm or a rise of more than 30 mg in the blood sugar is an indication of liver damage.

Fibrinogen—In 1933 Geill¹¹ reported making 284 determinations of the fibrin content of the blood plasma. Most of the patients were icteric as a result of dis-

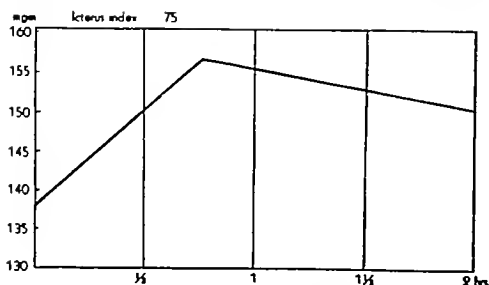


FIG 5 Sugar tolerance curve

turbances of the liver and biliary tract. He felt that values of 0.5 per cent or less of fibrin indicated diffuse disorder of the hepatic parenchyma, as in hepatitis, acute yellow atrophy, cirrhosis, or extensive carcinomatous metastasis of the liver. Values above 0.5 per cent indicated disturbances of the biliary tract, and therefore the existing jaundice must be considered as due to stasis. Under this group of biliary tract involvement is included cholelithiasis.

In some previous works^{12, 13, 14} reported upon the value of the dextrose tolerance test in the diagnosis of jaundice. It was found that any case of jaundice which, after the administration of 100 Gm of glucose orally, showed a return of the blood sugar to the normal level at the end of the two-hour period denoted a jaundice of toxic origin, in which instance operative interference would be of no practical value and might add considerably to the already existing liver damage (Figs 1 and 2). It was also found that cases of jaundice that responded to the dextrose tolerance test by a failure of the blood sugar curve at the end of the two-hour period to return to normal indicated that the jaundice was due to such lesions as stricture, suppuration, calculus or carcinoma of the common duct, carcinoma of head of pancreas, or to some intrinsic liver disease as cirrhosis, carcinoma, or abscess (Figs 3, 4, and 5).

From the surgeons point of view the cases that give rise to these so-called "obstructive" blood sugar curves are of extreme importance, for not all cases included under this heading are benefited by surgery.

In another communication I reported on a means of further differentiating the cases of jaundice due to obstruction of the common bile duct by calculus, stricture, suppuration, or carcinoma of the head of the pancreas from those due to such intrinsic hepatic lesions as cirrhosis, carcinoma, or abscess of the liver. This method consisted of placing the jaundiced patient on a regimen of 250 Gm of glucose orally, 10 units of insulin twice a day, and daily intramuscular injections of liver extract.

With the use of this regimen the cases of jaundice due to benign lesions of the liver, such as cirrhosis, reacted by a gradual decrease in the degree of icterus after a period of two to three weeks of therapy. Those cases that failed to respond in this manner were found to be due either to calculus in the common duct or carcinoma of the head of the pancreas or liver.

Cirrhosis of Liver

The question of therapy in cases of cirrhosis of the liver has always been a rather difficult one to solve. I feel that with the experimental and clinical data that I have assembled in the past eight years much more favorable results can be expected if our therapy is based upon these observations. In the first place the effect of the pathologic lesion must be viewed in the light of functional derangement of the liver. There results in these cases a definite hepatic insufficiency, just as pathologic lesions of the heart and kidney produce their respective insufficiencies. Without entering into the detailed theoretical discussion leading up to my observations which are to be published in another paper, I wish to present here those pertinent factors that play an important part in the therapy of cirrhosis of the liver and that properly belong here in the general discussion of jaundice.

Adequate experimental data has been furnished to convince us that liver damage and its repair are greatly dependent upon and very much benefited by carbohydrate ingestion. The storage of such ingested carbohydrates, being principally centered in the liver, is greatly interfered with as

the result of the liver damage. To combat this difficulty numerous observers have advocated the use of insulin combined with the increased administration of carbohydrates in an effort to combat this deficiency. There also occurs, however, as the result of liver damage and particularly in the lasting changes of cirrhosis, a definite vitamin B₁ deficiency. This has only recently been definitely established and confirms our previous clinical observation of various peripheral nerve lesions that are associated with some of these cases of cirrhosis. Whether such changes are the direct result of the ingestion of large amounts of alcohol as has been contended or are the result of the functional damage to the liver has not yet been definitely established. It is my belief, however, that the liver damage is the greater of these two factors.

I have found that these cases of cirrhosis are greatly improved by the daily intramuscular injection of liver extract, and where peripheral neuritis co-exists, complete restoration of function has been obtained in all the cases that have been treated by this method up to the present time. As a result of these various observations I have formulated a routine procedure for these cases of cirrhosis that has yielded very encouraging and striking results.

The patient with cirrhosis is given the following regimen: 1. Two hundred and fifty Gm of glucose dissolved in 1,000 cc of water and flavored with the juice of 3 or 4 lemons are made up, and this quantity is consumed during the twenty-four-hour period. 2. An ampule of liver extract is given intramuscularly every day. For this, either the new concentrated 1 cc ampule may be used or the old 3 cc one. 3. Regular insulin is given in 10-unit doses, one injection in the morning and one in the evening. 4. High carbohydrate diet is given in addition. 5. If ascites is present, adequate abdominal paracentesis is performed at varying intervals during the period of treatment for its relief.

On this regimen jaundice, if present, gradually subsides. The ascites dimin-

ishes, and there occurs a complete clearing up of the symptoms of peripheral neuritis, if present. The period of treatment varies from four weeks to several months depending upon the severity of the case, and where prolonged treatment is necessary, it is sometimes advisable to allow intervals of from one week or ten days, every three weeks, wherein the liver injections are temporarily stopped.

Our Procedure in Study of Cases of Jaundice

When a patient is admitted with jaundice a certain routine of procedure is usually followed. The icterus index, Van den Berg, total and free cholesterol, and blood phosphatase determinations are made. The stools are observed for evidence of bile excretion by that route. The duodenal drainage is also performed for the information that it may yield. A flat plate of the abdomen, of course, must also be included as a routine procedure, although it must be remembered that even the presence of a shadow in the region of the gallbladder does not necessarily mean that the jaundice is the result of calculus obstruction. We have had just such a case where the entire gallbladder was one calcific mass as revealed by the flat plate of the abdomen. Operation, however, disclosed that the jaundice was the result of extensive carcinomatous infiltration of the liver. We rely a good deal also upon the type of sugar tolerance curves that are obtained with these patients. Thus, in cases of jaundice where a sugar tolerance curve similar to that seen in Fig 1 or Fig 2 is obtained, the jaundice is considered to be due to purely toxic causes, and hence surgical interference is ruled out. On the other hand if a sugar tolerance curve is obtained similar to that seen in Figs 3, 4, or 5, the presence of so-called surgical jaundice should be suspected. If all the other available data still make one doubtful as to the exact mechanism of the jaundice, it is far safer to adopt the conservative method of administering to such a patient 250 Gm of glucose with 10 units of insulin twice a day and the injection of an ampule

of liver extract once a day This procedure is continued for a period of two weeks If at the end of that time the degree of icterus has remained unchanged or has increased, the lesion reduces itself down to either one of calculus obstruction or carcinoma of the head of the pancreas or liver Surgical intervention is certainly justified in such cases

Discussion

In arriving at a diagnosis as to the nature of any existing jaundice the composite picture, both clinical and laboratory, must be properly utilized, for it is only by this means that errors may be avoided From the clinical point of view the age of the patient and history of colic or of a previous attack of upper respiratory infection are extremely important Likewise the palpation of a markedly distended gallbladder or the persistence of clay colored stools must not be lost sight of

The attempt at duodenal drainage must be made in order to learn whether or not the obstruction is complete, as seen in cases of carcinoma of the head of the pancreas—also whether or not the bile contains cholesterol crystals, indicative of the presence of calculi

From the laboratory point of view the determination of the degree of icterus, the Van den Berg test, and the dextrose tolerance test are extremely important If the latter shows the so-called obstructive type of curve and there is some doubt as to whether the lesion is due to calculus obstruction or intrinsic hepatic disease, the advocated procedure of using 250 Gm of glucose daily with insulin and daily intramuscular injections of liver extract should be resorted to for a period of at least two weeks, with further check up on these laboratory procedures at the end of that period If the jaundice still persists to the same degree or severer, then surgical intervention is certainly the only procedure to be recommended

I should also like to mention here the importance of doing a blood sedimentation test in cases of jaundice Those cases associated with carcinomatous in-

volvement of either the liver or pancreas are nearly always accompanied by a rapid sedimentation rate It must be remembered, however, in this connection that severe anemias resulting from hemorrhage can also give rise to a rapid sedimentation rate and also that large increases in the blood cholesterol cause a corresponding increase in the sedimentation rate

The various other laboratory data, such as the total and free cholesterol, the phosphatase, and the bromsulfalein, galactose, and levulose tests, may be collected for the light that these data may throw on the degree of functional liver impairment present in the particular case. Such determinations help materially in evaluating the operative risk in the surgical cases, and they should be utilized in every case for this possible additional information

From the experience that I have had with the aforementioned procedures, I am obliged to conclude that they are helpful in cases of jaundice only insofar as they demonstrate the existence of liver damage If, however, these procedures are employed as some men have advocated—as a means of detecting the so called obstructive from nonobstructive cases of jaundice—then a great deal of disappointment and false conclusions are inevitable

Summary and Conclusions

1 Jaundice cases should be considered from the point of view of the productive mechanism as belonging either under the retention group or the resorptive group

2 Obstructive jaundice cases belong to the resorptive group, while certain cases of toxic jaundice also belong to the resorptive group

3 The last-mentioned fact has been the stumbling block in the various single tests that have been advocated for differentiating the so-called surgical from the medical cases of jaundice.

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TO AVOID PAST MISTAKES OF MILITARY MEDICINE

If or when war comes, every million men mobilized need 7,500 doctors drawn from civil practice. Dentists, nurses, sanitary engineers are needed too. In the mobilization of four million during the last war, more than a fourth of the effective medical men of the country were called to the colors. Whole counties were depleted of doctors. Many medical schools were almost put out of business, because the best men left for military duty. We should not repeat these mistakes. Today we should investigate who should go who should stay to practice, to teach, to operate an essential civilian service. We have no machinery now to do this. A coordinator of medical and health preparedness should create the machinery, working with the public health agencies, the schools and the medical profession itself.

We have a shortage of laboratory technicians. Intensive courses would provide more. Universal training would deplete the ranks of medical students, yet we need doctors each year to replace obsolescence. Some medical and other scientists are vastly more valuable to the country working on their present jobs than they pos-

sibly could be in the Army or Navy. Here are other tasks for medical planning through a coordinator.

There is urgent need for standardization of many medical and surgical procedures for emergency application in time of war. Much wasted effort also could be saved through standardization of medical equipment which would be of value in civilian no less than in military practice. Medical science grows, expands, opens up new possibilities for saving life and building strength. In the application of its basic sciences, medical practice must expand also to meet the new demands of the nation for self-preservation.

In the dictatorships, the state is served by sacrifice of the individual and enslavement of the men of science. If our democracy is to stand we—as doctors, as health officers, as health workers as citizens—of our own free will because we know it is necessary, must put medical science to work now, fully, to make our men as good as our machines.—Thomas Parran, *MD, Surgeon General, U S Public Health Service*

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Opening sessions at the recent convention at the Miramar Hotel featured the revelation by Dr A H Harsted that an 'electric gun' has been perfected for a successful war on tapeworms.

Electric impulses shock the tapeworm into segments, he explained, and the treatment is followed by a diet of a tuber related to the sun flower.

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MORTGAGED HIS OWN HEART BEATS"

The medical profession does not ask for praise but only that it be permitted to proceed with the present arrangement of personal relationship between the doctor and the patient, the doctor doing the charity work which has been his right and heritage since the beginning of medical history and has proved so fruitful in relieving the sick poor and in the tremendous advancement in the science of healing. The indigent sick is our ward.

When society has failed to provide for his economic needs when his neighbors have given him scant food, the doctor has heard his midnight call for help and has given freely not only of his medical skill but, of far greater value, he has mortgaged his own heart beats and has infused them with the very spirit of God himself that his patient might have renewed life.—*C E Burford MD, president-elect, Missouri State Medical Assn*

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THE OPERATIVE TREATMENT OF CATARACT OTHER THAN THE SENILE TYPE

THURBER LEWIN, M D , Buffalo, New York

THIS paper is written to include only the cases of cataract occasionally met with by the average ophthalmologist. A brief discussion of the operations for congenital cataracts, soft membranous cataracts, those following trauma or met with in industry, dislocated lenses, ectopia lentis, and the group called dinitrophenol cataracts is given. The subject treats the entire group as a whole to emphasize the general phases of these operations and how one method may be used with slight modification on several of them. It purposely does not take up each type of cataract mentioned in the outline and describe an operation for it.

Colonel Wright in his "Lectures on Cataract," which appeared in the *American Journal of Ophthalmology*, said "Every case is a law unto itself." One might say the same with regard to operators. What we must all aim for is the best possible result with the least possible risk. John Green has told us that all operations for cataract fall into two classes: (1) those that expose the cortex to absorption by the ocular fluids, (2) those that remove lens substance from the eye, as by extraction or expression.

In the first group, which may be used for juvenile soft and semisoft cataracts, Bell has advised that this be done in a two-stage operation. A small iridectomy is followed in about two months by doing a V-shaped dissection. He used a Ziegler knife, entering the conjunctiva 5 mm back of the limbus, pushing the conjunctiva ahead, and entering the anterior chamber through the sclera just behind the limbus.

In complicated, soft traumatic and flocculent cataracts he did a preliminary iridectomy in the usual way. The cataract was stirred up with a cystitome and

washed out with warm saline. Wright said in his lectures that preliminary iridectomy is necessary in complicated cataracts, especially so in Morgagni's cataracts, those with mother-of-pearl appearance and in high myopes of over 5 D, and those that dilate unevenly. When the preliminary iridectomy is done he advised that any mild adhesions of the iris be broken down and not be done at time of extraction and not at all if extensive. If the eye remains white and reasonably quiet some six or eight weeks later, the capsulotomy means of lens extraction is then done.

What you should decide will be determined best by repeated slit lamp studies before and after the preliminary iridectomy.

Lenses dislocated into the anterior chamber may be overripe, and the vitreous surface must be studied anteriorly. The section can be made not to include any vitreous herniation. Some years ago I saw a case of traumatic dislocation with the lens in the vitreous. An iridectomy was done, the lens localized by a small reflected light and brought out with a Snellen loupe, losing a fair amount of vitreous, apparently doing little harm to the final result.

In congenital cataracts the central part of the lens capsule should be detached and the fibers beneath stirred up, or one may do a through-and-through dissection such as advocated by Ziegler. This is a very efficient operation which has brought about many excellent results and only rarely any complication. I prefer it.

Barkan, however, treats congenital soft and membranous cataracts differently. He first advised dilating the pupil ad maximum by a subconjunctival injection of adrenalin 1-1,000 at nine to

twelve and three o'clock locations and then making an oblique corneal incision 1-2 mm from the limbus, with the keratome entering in a very oblique plane. Then the cystitome, the capsule forceps, hook, spoon, irrigator tip, or your favorite modification of some type of scissors may be used to attack the lens. Barkan laid great stress on the subconjunctival adrenalin because the pupil widely dilated by it, the pupil did not contract when the anterior chamber was opened, hypotony was brought about, and any possible hemorrhage was avoided or certainly reduced. I would like to try neosynephrin hydrochloride (Stearn) in the form of an emulsion in my next suitable case. This certainly acts splendidly on the iris and on the smaller blood vessels. What it might do to the inner structures should it seep into the wound will be determined. It contains a chloroform derivative as a preservative. However, we know adrenalin is tonic, whereas atropine paralyzes.

Horner's oblique corneal incision has the great advantage of closing by pressure from within, avoids the disadvantages of needling—such as the long convalescence and the necessity of repeated operations, with possible retinal detachment—and lessens subsequent glaucoma possibilities. He claims the wound by its position is safe in small children who will not be quiet after operation. It is done under general anesthesia up to 10 years of age and local thereafter.

Soft cataracts after 10 years of age, whether congenital or acquired, may have a dissection and a secondary keratome extraction one to three days later only if complications develop.

I read with interest Ballantynes description of posterior needling of lamellar or soft cataracts. Any knife-needle may be used, it is passed through the sclera below the tendon of the external rectus muscle 5 mm from the cornea-scleral junction, its point being directed into the vitreous and forward to the posterior pole of the lens. A crisscross incision is made in the posterior capsule and lens cortex by swinging the handle toward the temple. I know of no one routinely doing

this in America, and I mention it only to disapprove it.

Foreign bodies in the lens should all be studied with the slit lamp and, when proper, removed with the lens substance by a method such as Barkan's. The lens material should be examined carefully after removal, and, when the eye is quiet, it should again be x-rayed. Some time ago I saw a case where glass had entered the lens and formed a cataract. An iridectomy and lens pumping was done, but unfortunately the foreign body was seen later in the anterior chamber, although it supposedly came out with the soft lens structure. For this reason I would suggest immediate study of the lens when removed and another x-ray.

In cases of ectopia lentis I would rather avoid operation wherever possible. Reese has said that after dissection these lenses have the peculiar characteristic of being poorly absorbed. This being so, there remains the operation of a liberal preliminary iridectomy followed, some months later, by a loop extraction of the lens.

Dinitrophenol cataracts, according to Horner, yield in general to any technique applicable to extraction of soft cataract. He preserved the round pupil by making a small incision with a conjunctival flap, a peripheral iridotomy, wide capsulotomy, and expression by pressure. If Barkan's method be used, the keratome is entered into the cornea as described, forced into the lens proper, left there as a guide along which the soft lenticular fibers are expressed, and then rotated or moved in such a way as to break up masses and encourage their expulsion.

In the discussion of Horner's paper I told of my first case of dinitrophenol cataract which developed the most marked secondary glaucoma due to the swelling lenses. The tension came on in each eye, the second a few weeks after the first, and iridectomy promptly relieved it. Later lens expression was done. These cases in your experiences and mine usually give excellent results. They are younger and have no senile changes or vascular complications.

I have said little about anesthesia

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upon. There was no increase of tension in either eye, although the lenses were greatly swollen.

Radiation cataract, recently reported by Dr Reese, is of considerable interest. In these eyes there is a tendency toward proliferation of the epithelium under the anterior capsule into a metaplastic fibrous layer, which strengthens the anterior capsule and makes this type of cataract particularly suitable for intracapsular extraction. Extracapsular extraction in such cases is contraindicated due to the frequent formation of a dense secondary membrane which tends to produce iridocyclitis and secondary glaucoma. There seems to be some difference of opinion as to the explanation for these complications.

Dr Walter E Moore, *Brooklyn, New York*—I feel we should all be very grateful to Dr LeWin for bringing this subject to our attention. As you know, it is really a neglected portion of cataract surgery. Congenital cataracts are relatively infrequent, and, when they do come to us at the clinic, they are too apt to be dismissed with the statement that a needling will take care of everything. I feel that these cases should have the same careful preoperative work-up that is accorded the senile cases. They should all be studied by a pediatrician to find or rule out other congenital defects, constitutional diseases, and focal infections. If necessary, surgery should be postponed until such conditions have been cleared up. In addition, I would urge a skin test for sensitivity to lens protein—for, in spite of its rarity, the phacoanaphylactic reaction described by Verhoeff is a reality and must be considered.

It has been our experience at the Brooklyn Eye and Ear Hospital that anterior capsulotomy is to be preferred to the through-and-through dissection of Ziegler. We have had very few cases of hypertension following the former procedure, and those that have occurred have responded readily to subsequent keratome incision and irrigation. Spaeth, in his recently published volume on *Ophthalmic Surgery* (which is really a masterpiece), calls attention to the fact that through-and-through incision is not a guarantee against the development of secondary glaucoma and that instead damage may occur to the vitreous causing a very chronic type of iridocyclitis. Many of our cases must develop a low-grade iridocyclitis or at least iritis during the postoperative period after being discharged from the ward, for it is not infrequent to see these youngsters in the clinic two weeks or a month after a needling with small bound-down pupils that resist all our efforts to dilate them. Of course this is to a great extent, caused by the lack of cooperation or understanding on the

part of the mother who not only fails to instill the atropine drops properly but also neglects to bring the child to the clinic, as instructed, for frequent observation.

I agree wholeheartedly with Dr LeWin in condemning the posterior needling operation which he has described. Any unnecessary invasion of the vitreous chamber should be avoided.

It is interesting and instructive to note how we all strive to avoid surgery on the cases of congenital dislocation of the lens. Much can be accomplished in most of these cases without resorting to dissection or removal of the lenses. They rarely become cataractous. A careful study, slit lamp and otherwise, will tell you whether or not the child can use the dislocated lenses for vision. Perhaps an iridectomy will permit him to do so. In other cases when the dislocation is sufficient, he can wear cataract lenses with comfort, or perhaps an iridectomy will permit him to do so. Each case is a law unto itself.

I have recently seen in our clinic 2 cases of complicated cataract caused by iridocyclitis. Both were in young men in the late twenties who requested operation chiefly for cosmetic reasons. An intracapsular extraction with peripheral iridotomy was attempted on the first case and proved so completely successful that the same procedure was decided upon for the second. This, too, was successful and in each case vision was correctable to better than 20/30. There was no difficulty with the zonules as the iridocyclitis had rendered them friable.

I shall be grateful if Dr LeWin will tell us what he considers the proper age for operating for congenital cataracts.

Dr Frank M Sulzman, *Troy, New York*—May I congratulate Dr LeWin on his paper covering as it does an important portion of ophthalmic surgery.

We will all agree with his quotation of Colonel Wright: "Every case is a law unto itself."

Let us limit our discussion to the following: (1) congenital cataract, (2) soft membrane or traumatic cataracts (the problem here is almost identical), (3) dislocated lenses, ectopia lentis.

Under Group 1 we have found that with an ordinary Bowman or a Ziegler knife-needle the capsule can be opened with the so-called crucial incision and the lens substance broken up. Later the lens substance can be removed by linear extraction. It has been our experience that several needlings are necessary in some cases.

Dr Barkan's method which Dr LeWin quoted is new to us, and until time has elapsed

except to mention the 10-year limit. It must depend on the individual case. In children and unruly patients, general anesthesia, by one doing that specialty, is best. Older cases are given butyn or cocaine, and a retrobulbar injection of 4 per cent novocain, and the lids are given the so-called O'Brien injections with one suture in the upper lid to hold it closed by adhesive on the cheek.

Proper illumination is most necessary. There are many lamps that are satisfactory. At the American Academy meeting in Washington, October, 1938, the Lambeth lamp, which is used in an otherwise darkened room, created favorable comment and is a useful addition.

In conclusion, I repeat, we are after the best possible result with the least risk. In all of these cases, one of the most important questions to decide first is whether a preliminary iridectomy is necessary. It is safest in older individuals but not to be desired in younger folk where a round pupil has its advantages. Age also must play an important role in the type of incision made. For this reason I prefer a Ziegler knife in a child and a Wheeler knife in older persons. Horner has a method most applicable to the greater majority of the type of cases outlined, and it can apparently be used regardless of age.

Discussions

Dr Lawrence E. Henderson, *Watertown, New York*—Discussion of this subject is particularly difficult since Dr LeWin has so thoroughly covered the literature and set forth so many of the points necessary for the consummation of successful management of 'Cataract Other Than the Senile Type.'

I have examined the records of the cataract cases operated upon by us during the past ten years and find that those not of the senile type make up only 3 per cent of the total number. The average vision obtained has been 20/25, which is just about the same as in those of the senile type. The operative procedure used varied with the type of cataract encountered. Most of the congenital cases were needled, those where only an anterior capsulotomy was done usually had to have a second operation. In a few the posterior capsule was incised and equally good results were obtained. Ziegler advocates an in-

verted V-shaped dissection going through the posterior capsule. He claims glaucoma does not supervene because of the posterior opening into the vitreous chamber and that liquefaction and absorption are much more rapid. Perhaps some of us have some timidity in employing this method, fearing that should the tension necessitate evacuating the anterior chamber, considerable vitreous might be lost.

Barkan advocates wide dilatation of the pupil by subconjunctival injections of adrenalin, with an oblique keratome incision within the cornea for safety's sake, while more recently Blass is very enthusiastic over his success in "Removal of Cataract by Aspiration." He uses a dissection knife with a short broad blade, enters the anterior chamber at the temporal limbus, makes multiple cross lacerations of the anterior capsule, and stirs up the deeper cortical substance. He keeps the eye atropinized from one to several days, then makes a keratome incision under a narrow conjunctival flap temporarily, and sucks out the broken down lens material through a cannula. He uses a Hildreth lamp to search for fragments of debris which escape detection with an ordinary white light, refills the anterior chamber with normal salt solution, and empties it a second time with a clean cannula. If he considers it safe, he now makes a vertical incision in the posterior capsule with a curved dissection knife introduced through the temporal keratome incision, inspects it with the ultraviolet ray lamp, and lastly refills the anterior chamber with air, with a syringe and blunt-tipped lachrymal needle. He admits that in some cases the pupil becomes markedly constricted, and he postpones the posterior capsulotomy for a few days. Neosynephrin, mentioned by Dr LeWin, or adrenalin, 1:100 solution, might be useful in keeping the pupil wide. Probably the greater part of the success achieved by the operator using the above technic was the avoidance of prolonged phaco-anaphylactic reaction which must always be considered.

Reference to the dimetrophenol type of cataract need be mentioned only to add 1 more typical case to the list of close to 100 cases already reported. The patient was a woman, 46 years of age, and a mother of eleven children. She had taken the drug intermittently for fifteen months. After the blurring was noticed, the left lens was completely opaque in five months. A combined extraction was done, with lavage of the anterior chamber to remove as much of the lens (which was partially liquefied) as possible. Iritis developed on the third day but subsided shortly. The vision obtained was 20/13. The second eye duplicated the first and is soon to be operated

STREPTOCOCCUS PNEUMONIA

EDGAR A. LAWRENCE, M.D., and WHEELAN D. SUTLIFF, M.D., New York City
(Advisor on Pneumonia Serum Therapy, Pneumonia Control Division, and Assistant Director, Bureau of Laboratories Respectively, New York City Department of Health)

THE following study of pneumonia cases whose sputum contained beta hemolytic streptococcus was undertaken during the course of the New York City Pneumonia Control Program in order to determine the incidence of such pneumonias, the extent to which sulfanilamide therapy is used, and the results of its use. No other series of streptococcus pneumonia patients treated at home as well as in the hospital during an inter-epidemic period has come to our attention.

The most thorough studies of streptococcus pneumonia have been carried out during epidemics by Finkler¹ and MacCallum.² The incidence in interepidemic periods has been reported from a large city hospital by Bullock³ as 2.8 per cent (6,128) cases and in private patients, mostly hospitalized, by Cecil and Lawrence⁴ as 3.4 per cent (911 cases).

Massive pleural effusion is said to be characteristic of the disease, and late in the disease large amounts of thin sero-sanguineous fluid may be encountered. Authors whose figures are based on hospital series have found the incidence of empyema to be from 50 to 75 per cent of all cases.

The death rate in different series of streptococcus pneumonia cases varies from 35 to 60 per cent, the latter figures being reached in epidemic years. Cecil and Lawrence reported a fatality rate of 47.4 per cent, and Bullock at Harlem Hospital reported 33.3 per cent in 177 cases.

Only individual cases or very small groups of streptococcus pneumonia patients treated with sulfanilamide have been reported.^{5,6,7,8} An adequate dose of sulfanilamide may be defined from the work of Marshall and Long as an initial dose of 3 to 5 Gm. of the drug with subsequent doses of 6 Gm. daily in adults,

and from 1 to 3 Gm. initially with subsequent daily doses of 3 Gm. in children. Such doses should continue throughout the acute illness.

The material to be presented is derived from the reports of the diagnostic and serum distribution stations of the Pneumonia Control Division of the New York City Department of Health. Clinical reports were filled out on forms supplied by the Health Department by physicians for whom bacteriologic examinations were performed.

Every sputum sample submitted to the Pneumonia Control Division stations was examined for hemolytic streptococcus by inoculation on fresh blood agar plates. Organisms producing complete hemolysis were described as beta hemolytic streptococcus, and these were considered significant if they constituted more than 15 per cent of the colonies on the blood agar plate. Ninety-five cases of this series showed more than 50 per cent of the colonies to be hemolytic streptococcus. No further identification of the streptococcus according to the Lancefield grouping or the Griffith type identification was carried out.

Incidence

In 2,791 sputums examined in the New York City Department of Health laboratories from December 1, 1937, to May 7, 1938, beta hemolytic streptococcus was found in 141 specimens, or 5.05 per cent of the specimens examined. Fifteen of these 141 patients did not have pneumonia. The remaining 126 cases of pneumonia provided the material for the analysis below. Hemolytic streptococcus was found unassociated with the pneumococcus in 81 of the cases, and in the remaining 45 cases the hemolytic streptococcus and the pneumococcus were both

and others report their results it might be well to withhold opinion

The soft membranous and traumatic cataracts have yielded excellent results by the following procedure using a bent Agnew keratome or a narrow keratome, an incision is made from above. We prefer one beginning on the sclera with a small conjunctival fold entering the anterior chamber in the usual way. The keratome opens the lens capsule, and the point is rotated slightly to break up the lens substance before its removal.

I also use a cystitome to complete more thoroughly the breaking up of the lens substance. Then with an irrigator the soft lens substance is usually easily removed. This method is not suitable as a rule in people past 30.

I do not use an iridectomy and prefer avoiding it, as the round pupil is much to be desired in all cases if possible.

We have used the emulsion of neosynephrin and found it very efficient.

I have seen Professor Sachs do a discussion using two Bowman knife-needles, but most operators prefer the one instrument. As the results are satisfactory I believe the latter method will remain the popular one.

I agree with the writer regarding foreign bodies in the lens substance. Slit lamp and all the usual preoperative measures should be carefully considered and used. Each presents a special problem, as he well states.

In ectopia lentis or congenital dislocation I have seen excellent results from careful refraction and over a period of years I have noted very little change in vision. He wisely states that

operative measures should be avoided if possible.

Dislocated Lenses—Excluding those occurring at the time of a cataract extraction, when they present a surgical emergency to be met with at once, each one is law unto itself. I have found the Erhardt spoon of great value in many of these.

With the traumatic dislocated lenses each one presents an individual problem.

One patient who presented himself to me may be of interest and value. He came to me complaining of something interfering with his vision following an injury some time before. When I first saw him, the lens was in the anterior chamber but would disappear into the vitreous on certain movements of the head. He gave a history of intermittent pain and the eye showed some irritation. He was sent to the hospital, and the next morning the usual preoperative anesthesia, etc., was started. When I came to look at his eye about fifteen minutes later, the lens had disappeared into the vitreous and was not to be seen. He was placed in a prone position on his face, and in a short time the lens again presented itself. A strong solution of eserine was instilled at different times for twenty-four hours, and the lens was removed at the end of twenty-four hours by simple extraction with a minimum of vitreous loss.

I saw the Lambeth lamp in Washington but have had no personal experience with it. The Zeiss hammer lamp has been excellent over a long period of time with us.

My experience with dinitrophenol cataract is very limited, and so I will leave the discussion of this to others.

FORGED PRESCRIPTIONS

A warning is published in the *American Drug-gist* that physicians are being made innocent confederates of dope addicts and peddlers.

The war in Europe is cutting down heavily on the narcotics supply in this country and law enforcement agencies are cracking down harder than ever, and the result is that dope peddlers and addicts are turning in desperation to every possible source of supply, especially the retail pharmacist.

One method employed by the addicts, described as "comparatively easy to put across," is the forged prescription. Prescription blanks, it said, are easy to get, usually being lifted from a physician's desk. And it is surprising how perfect a Latin prescription an addict can write.

However, a prescription including a narcotics ingredient must bear the physician's narcotics registration number. Still, the addicts sometimes may be able to learn the number, or they may "get away" with a fictitious number at a drug store where the physician whose name is attached to the prescription happens to be unknown. Some physicians have their numbers on their regular prescription blanks.

PERIL OF THE DIABETIC DRIVER

Still another driving hazard lies in the diabetic driver, says a writer in *The Medical World*. Insulin has proved a marvelous boon to the diabetic but it is an unfortunate fact that one who must take insulin is never entirely sure that he will not go into insulin shock. With the old insulin there usually were premonitory symptoms—sweating, nervous instability, disturbances of vision, extreme hunger—that warned him his blood sugar was getting low. The newer insulins, particularly protamine zinc insulin, have a tendency to lower the blood sugar so gradually that the person may go into shock without any warning. Furthermore, the continuous action of the insulin may throw the person into shock a second or third time after sugar has brought him out of the first attack. It is easy to see the menace to others the diabetic driver may become. A news item several years ago told of a driver being arrested for drunkenness and proving in court that he never touched alcohol but was subject to insulin shock. One can sympathize with the diabetic who finds it necessary to drive a car, but for the public good it may be found essential to bar him from an automobile license.

hospitals (a fatality rate of 31.8 per cent in the 22 cases taken to hospitals), and 6 died at home (a fatality rate of only 5.7 per cent in 104 cases treated at home). No details of the cause of death were given in 3 cases. In 4 cases a positive blood culture was obtained. One case had a preceding chronic glomerulonephritis and died in uremia. Two cases showed liver and lung abscesses at autopsy. Three cases showed sputum containing both streptococci and pneumococci, 1 dying from empyema and 1 with a blood culture positive for streptococci.

Treatment with Sulfanilamide

Of the entire series 67 cases received sulfanilamide. Of these only 10 cases received an adequate dose of the drug. In these 10 cases there were no deaths. There were 8 deaths (14 per cent) in the 57 treated cases that received less than 6 Gm per day and 5 deaths (8.4 per cent) in the 59 cases not receiving the drug. It would appear that the majority of the patients in this series, treated in February, March, and April, 1938, did not receive an adequate dose of the drug. Those treated according to the standard procedure, although few in number, showed good results.

Summary

1. Hemolytic streptococci were found to constitute more than 15 per cent of colonies on the blood agar plates in 5.05 per cent of all sputum specimens examined.

BARBITURATE ADDICTION FAIRLY COMMON

Barbiturate addiction is fairly common, making up one-tenth of all drug addiction cases (excluding chronic alcoholism) received by hospitals in the larger cities, Dr W E Hambourger, Cleveland, states in a report on the promiscuous use of barbiturates published in the *Journal of the American Medical Association* for May 18 by authority of the Council on Pharmacy and Chemistry of the association. This report of Dr Hambourger's supplements one by him published in the *J.A.M.A.* in April, 1939.

The data upon which the study was based were obtained from thirteen hospitals located in the larger cities in the New England, Atlantic Middle Western, and Southwestern areas. The report points out that, although this distribution does not represent a typical cross section of American life nevertheless the statistics available for study represent more than 1,250,000 hospital admissions for the decade 1928-1937.

by the New York City Department of Health from December 1, 1937 to May 7, 1938.

2. One hundred and twenty-six cases of pneumonia are reviewed. Eighty-one of these were due to hemolytic streptococci and 45 were due to hemolytic streptococci in association with pneumococci.

3. The fatality rate for the entire series was 10.3 per cent. Of the 13 fatal cases 7 died in hospitals (a fatality rate of 31.8 per cent in 22 hospitalized cases).

4. Empyema was not frequent in this series, occurring in only 3.2 per cent of the total number of cases and 18.1 per cent of the hospitalized cases.

5. In 10 cases receiving adequate doses of sulfanilamide there were no deaths. Among 57 cases that received less than the generally recommended dose of sulfanilamide, 8 deaths were reported, or 14 per cent. Fifty-nine cases received no sulfanilamide and 4 of these, or 8.4 per cent, died.

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The complete study leads Dr Hambourger to conclude that "The evidence clearly indicates that the barbiturates are responsible for many suicides, successful and attempted, as well as for many so-called 'accidental' intoxications."

Retail sales of the barbiturates to consumers may now be made only on prescription by a physician in twenty-six states as the result of laws enacted up to May 1, 1940, the Bureau of Legal Medicine and Legislation of the American Medical Association reports in the association's *Journal* for May 18.

The states enacting such laws are Alabama, Arkansas, California, Colorado, Connecticut, Delaware, Florida, Georgia, Maine, Maryland, Minnesota, Mississippi, Nebraska, Nevada, New Jersey, New York, North Carolina, Oregon, Pennsylvania, Rhode Island, South Carolina, Tennessee, Vermont, Virginia, Washington, and West Virginia.

TABLE 1—FATALITY RATE OF HEMOLYTIC STREPTOCOCCUS PNEUMONIA

Age Groups	Hemolytic Streptococcus			Hemolytic Streptococcus and Pneumococcus		
	No of cases	Died	Mortality percentage	No of cases	Died	Mortality percentage
0-1	1			1		
1-2	1			1		
3-5	5			3		
6-10	5			7		
11-20	13	2	15.4	9		
21-30	13			3	2	66.6
31-40	15	2	13.3	9		
41-50	9	2	22.2	3		
51-60	11		18.1	3		
61-70	8	2	25.0	6	1	16.6
Totals	81	10	12.3	45	3	6.6

isolated. Other bacteria that commonly occur in sputums but that are not commonly associated with pneumonia have been omitted from the study.

Men and women are equally represented, 63 cases occurring in each sex. Ages ranged from 1 to 70 years, 24 cases occurring in children under the age of 10. The average age was 31.6 years, and where the beta hemolytic streptococcus was present alone, the average was 32.4 years.

Symptoms and Clinical Characteristics

The onset of the pneumonia was usually gradual, symptoms of influenza preceded the onset in 27 cases, symptoms of measles preceded the onset in 3 cases, and symptoms of acute sore throat preceded the onset in 12 cases.

In patients showing hemolytic streptococcus unassociated with pneumococcus, the characteristics of the sputum were found to be in no way different from the sputum occurring in pneumococcus lobar pneumonia.

In cases of pure hemolytic streptococcus there were 19 cases showing a confluent lesion affecting one or more entire lobes and 51 cases showing a patchy distribution. In 81 cases of hemolytic streptococcus pneumonia one lobe was involved in 50 cases, two lobes in 28 cases, and three or more lobes in 3 cases.

Blood cultures were taken in 18 patients. Of the 14 patients with hemolytic streptococcus alone in the sputum three blood cultures were positive for hemolytic streptococcus. Of the 4 cases with streptococcus and pneumococcus in the sputum 1 had a blood culture positive for

hemolytic streptococcus. All 4 cases with positive blood cultures died.

Complications

Analysis of the complications encountered in this series reveals a lower incidence than has been noted by others. In our series empyema occurred in only 4 cases (or 3.2 per cent). Three of these cases had only hemolytic streptococcus in their sputum (3 of 81, or 3.7 per cent), and 1 case (1 of 45, or 2.2 per cent) showed streptococci associated with pneumococci. All of these occurred in the 22 hospital cases, making an incidence of 18.1 per cent. Otitis media occurred in 5 cases (3.9 per cent), acute nephritis in 1 case (0.9 per cent), liver abscess in 2 cases (1.5 per cent), and phlebitis in 2 cases (1.5 per cent) of the entire series. Both cases of phlebitis occurred in pure hemolytic streptococcus pneumonia. No further complications, other than those associated with the exodus (such as acute pulmonary edema, heart failure, etc.), were noted.

Fatality Rates

As can be seen from Table 1, in the present series of 81 cases of pure streptococcus pneumonia there were 10 deaths, a mortality of 12.3 per cent. In 45 cases with streptococcus associated with pneumococcus in the sputum there were 3 deaths, a mortality of 6.6 per cent. Type specific antipneumococcus serum was given in 13 cases, due to Pneumococcus types I, III, IV, V, and VI, with 2 deaths. The fatality rate for the entire series was 13 of 126 cases, or 10.3 per cent. Nine deaths occurred in women and only 4 in men. Of the 13 fatal cases 7 died in

number 875), blood platelets 80,000, shaped round and of large and medium size.

Case 4—A woman, aged 49, having suffered for years from cholecystitis and arthritis fell ill with a highly feverish, extended follicular tonsillitis, a severe swelling of the throat, and severe gingivitis. Leukocytes numbered 2,000, myeloblasts, 2 per cent (absolute number 40), neutrophil myelocytes, 10 per cent (absolute number 200), staff cells and juvenile neutrophils, 8 per cent (absolute number 160), segmented neutrophils, 0, lymphocytes, 72 per cent (absolute number 1,440), monocytes, 8 per cent (absolute number 160), blood platelets 100,000 of large and medium size. The next day the temperature dropped, leukocytes, 2,500, neutrophil myelocytes, 20 per cent (absolute number 500), staff cells and juvenile neutrophils, 32 per cent (absolute number 800), segmented neutrophils, 4 per cent (absolute number 100), lymphocytes, 42 per cent (absolute number 1,050), monocytes, 2 per cent (absolute number 50), blood platelets 200,000 of large and medium size—at the rate of 85, even huge platelets appeared.

In spite of the severe gingivitis only epithelial cells could be found on the mucous membrane. Even in the spittle there were only a few corpuscles in consequence of slackness of the myeloid system. There were further epithelial nucleus, spirals, and fusiform bacillus coccus. Four days later the leukocytes numbered 3,500, myelocytes, 4 per cent (absolute number 140), staff cells and juvenile neutrophils, 8 per cent (absolute number 280), segmented neutrophils, 44 per cent (absolute number 1,540), lymphocytes, 40 per cent (absolute number 1,400), monocytes 4 per cent (absolute number 140), blood platelets 200,000 of large and medium size at the rate of 68, no huge platelets more, red blood corpuscles, 3,800,000, anisocytosis, hemo-

globin, 60 per cent. A hemorrhage appeared, and in the blood there were leukocytes, 2 to 3 per cent segmented cells, and 2 per cent staff cells. Also at the gingiva and in the spittle white blood cells in abundant quantity could be seen.

A fortnight later there was still a slight gingivitis and a left shift while the red blood image was already greatly improving. Leukocytes numbered 5,600, staff cells and juvenile neutrophils, 10 per cent (absolute number 560), segmented neutrophils, 67 per cent (absolute number 3,752), lymphocytes, 20 per cent (absolute number 1,120), eosinophils, 1 per cent (absolute number 56), basophils, 0.5 per cent (absolute number 28), monocytes, 1.5 per cent (absolute number 84), blood platelets 250,000 of medium and small size, red blood cells, 4,200,000, hemoglobin, 75 per cent.

The treatment in these and similar cases consisted of keeping the patient in bed, applying neck compresses, local applications, gargling, antipyretics of the salicylic series and quinine, autohemotherapeutic treatment, vitamin C, extracts of corpus luteum, coagulen, calcium, strychnon, and pentose nucleotide. Drugs engendering leukopenia, especially pyrimidon but also any other preparations containing the benzol rings, have to be avoided.

The cases mentioned above show the existence of a fortunately short and quickly passing damage of the bone marrow concerning the ripening process of the myeloblasts and megakaryocytes according to "deficiency of maturation factors" (Lescher and Hubble, Whittby and Britton *Disorders of the Blood*, 1937).

SULFAPYRIDINE'S BIG DIVIDENDS

Estimates based on current experience indicate that the New York City Department of Health will spend \$100,000 less for pneumonia serum in 1940 as the result of the discovery of sulfapyridine. This was disclosed in a report submitted to Health Commissioner John L. Rice by the Advisory Committee on Pneumonia Control, comprised of New York City specialists in internal medicine who are studying the newer advances in pneumonia treatment, representatives of the County Medical Society, and the Health Department's Pneumonia Control Division. The committee has approved a program aimed at the more extensive use of chemotherapy in pneumonia, but points out that in addition to chemotherapy, serum treatment is still necessary in many cases.

QUARANTINE INFECTED MINDS, TOO

We do not propose to stand by and see the mental processes of the American people get into an unhygienic state by contamination from individuals who are infected with some mental virus from unhealthful areas of the world. Such individuals give evidence of wanting to change America's way of life from one of the best places in the world to live to forms of government where life, to say nothing of health, seems very cheap. Let us keep from emigrating to this country people infected with smallpox and typhoid and, likewise, men whose minds are infected with strange fancies of government—and this in the interest of preventive medicine.—By Ralph H. Pino, M.D., at the Mt. Carmel Mercy Hospital Banquet, Michigan, January 31, 1940.

Maternal Welfare

From time to time under this heading articles appear on obstetrical subjects which are deemed of importance as aids to improvement of maternal welfare in New York State. The members of the committee are Charles A. Gordon, M.D., chairman, James A. Quigley, M.D., and Ferdinand J. Schoeneck, M.D.

The Diagnosis of Pregnancy

USUALLY the diagnosis of pregnancy is an easy matter, the patient herself is often aware of it before she presents herself to her doctor. This is not always so, and in a small percentage of cases the certainty of the existence or absence of pregnancy is difficult to establish.

There are instances where it is quite important that the presence or absence of pregnancy be determined, and a physician should be guarded in making a positive diagnosis until he can prove it. A mistake here may be damaging to the reputation of his patient or to his own. With the advent of newer biologic tests there is little excuse for an error in these borderline cases.

The signs and symptoms have been grouped as presumptive, probable, and positive. Let us consider these in reverse order. There are four positive signs:

1. Hearing and counting the fetal heart.
2. The identification of active and passive movements of the fetus—or quickening.
3. The palpation of its outlines.
4. Roentgenographic picture of the skeleton of the fetus.

None of these four positive signs is available until well into the second trimester and usually not until pregnancy has reached the halfway mark, viz., four and one-half calendar months. The sound of the fetal heart has been aptly compared to that of a watch under a pillow and unless the abdominal wall is unusually thick it can be heard with ease at four and one-half to five months, though it is claimed that by the use of a special stethoscope against the vault of the vagina, it can be found at three or three and one-half months.

In a primipara the perception of fetal movements, to be positive, should be an objective sign recognized by the physician by palpation of the uterus or by auscultation with a stethoscope. Subjectively, they may be recognized in a multipara at the end of the fourth month. In the primigravida it is usually four and one-half months, and rarely they are not felt till late in pregnancy.

The probable signs are:

1. Changes in the cervix.
2. Changes in the size, shape, and consistency of the uterus.

3. Enlargement of the abdomen.

4. Braxton Hicks contractions of the uterus.

Softening of the Cervix.

Pregnancy may be suspected when the region of the external os assumes a velvety feel with a little resistance as that offered by palpation of the lips, whereas the feel of the nonpregnant cervix has been likened to that of the cartilage of the nose.

The uterine body enlarges slowly at first, and even at the end of the second month it is only slightly greater in size than normal. However, it is more globular in outline and by the end of the third month is the size of a large orange and begins to emerge from the pelvis into the abdomen. Coincident with the increase in size and globular shape is a marked softening of the organ, so soft in some cases that the uterus is difficult to identify. At the sixth week one of the most valuable of the early signs appears, Hegar's sign or softening of the lower uterine segment, felt by bimanual palpation between the hard cervix below and the uterine body above.

Enlargement of the Abdomen.—From the third month when the fundus first rises out of the pelvis to the ninth there is progressive abdominal enlargement. Roughly, the fundal height at the sixteenth week is just above the symphysis, at the twentieth, halfway to the umbilicus, at the twenty-fourth, at the umbilicus, at the twenty-eighth, one-third of the distance from the umbilicus to the ensiform process, at the thirty-second week, two-thirds of this distance, at the thirty-sixth week, at the ensiform, and at the fortieth, a recession to a point near that of the thirty-second. Braxton Hicks' name is associated with the intermittent painless (usually) contractions of the uterus appreciated by the palpating hand.

The presumptive signs of pregnancy:

1. Cessation of menstruation in a patient with a history of regular menses. Fear of pregnancy may inhibit menstruation and menstruation may occur in an atypical form after conception. This happens rarely for more than the first or second month.

2. Nausea and vomiting occur in 50 per cent of all pregnancies and first appears after the end of the first month though it may appear earlier.

which were already our prospects. If we could offer either type, complete medical and surgical or surgical only, we would have the inside track in these organizations.

The executive committee of the corporation believes that the solution to the problem is centered in affirmative action on two propositions:

- 1 The submission to the public of an additional surgical contract as proposed in the resolution adopted by the committee
- 2 The waiving of income limits on eligibility for membership providing, of course, that both the original contract and the proposed new surgical contract shall operate as service agreements without further expense to the subscriber who is within the present income limits, that the contracts are for indemnity (not service) for subscribers above present income limit and the doctors shall have the privilege of charging additional fees to the latter subscribers.

The county society *Bulletin* says editorially: "Let us assume our responsibility before it is too late. The apathy of the members of our county society in relation to the Western New York Medical Plan, Inc., as evidenced by the poor attendance at a recent meeting may be responsible for the development of compulsory state health insurance. Today our profession is undermined through sinister propaganda, and it is up to each one to throw off apathy and assume his full responsibility. We have been slow to realize that the forces of democracy are working for a centralization of power."

"Through propaganda the public is led to believe that American medicine is inadequate for the people and that the federal government should take charge of this inadequacy. "It is the duty of each member of the Medical Society of the County of Erie to come out of his lethargy and state the facts to the public. The best medical care is given by a free profession to a free people."

Greene County

At the midsummer meeting of the Greene County Medical Society at Haines Falls on July 9, the following nominations were made for officers to be elected in October:

For president, Dr Herbert Weinauer of Windham for vice-president Dr William V Wax of Catskill, for secretary Dr William M Rapp, for treasurer, Dr M H Atkinson. Dr Percy G Waller of New Baltimore was named chairman of the legislative committee and Dr E G Mulbury of Windham was named chairman of public health and public relations. Dr Kenneth F Bott of Greenville was named delegate to the State Society and Dr Lacy of Freehold was named alternate.

Among those present were Dr and Mrs I T Sutton of Prattsville. The society paid tribute to Dr Sutton on the fiftieth anniversary of his practice of medicine in Greene County.

Monroe County

Creation of a Medical Defense Committee to coordinate military and civilian health services in time of national emergency is announced by the Monroe County Medical Society. Headed by Dr Clarence P Thomas the committee will draft plans in cooperation with the American Medical Association and the State

Medical Society to provide additional officers for National Guard or Regular Army and to furnish medical and sanitary service to industry on a war basis.

Hospital staffs of city and county, as well as industry, will be represented on the committee, which will take part in the statewide survey of medical defense resources undertaken by the state group, it is said.

In line with the State Medical Society's policy, explained by Dr Samuel J Kopetzky of New York, state defense chairman, the Rochester committee also will consider care of refugees and British and French children. Tentatively, on the committee's agenda is medical care of families, which, the state chairman said, may have "breadwinners in the service."

Tied in directly with the national defense program, the committee will work closely with the Rochester Health Bureau, according to Dr Albert D Kaiser, president of Monroe County Medical Society. He pointed out that care must be taken that no community is deprived of a necessary number of physicians and specialists and that medical schools and hospitals maintain high standards of teaching and medical care. Members of the Monroe County Medical Defense Committee besides Dr Thomas, include Dr John Arthur M Johnson, city health officer, John Hazen, Brockport, Milton Chapman, Benjamin J Duffy, George Gage, Austin G Morris, John J Morton, and William A Sawyer, all of Rochester. Raymond H Greenman, executive secretary of the county medical society, is secretary.

Montgomery County

Dr Horace Madison Hicks 77, of Amsterdam, who had practiced medicine fifty-four years, forty-nine of them in that city, died at his home on July 19. He had held important posts in the state and county medical societies, as told below in the resolutions adopted by the county organization. He saw medical service in the Spanish-American War and at the time of his death was a major in the Medical Reserve Corps.

A special meeting of the Comitua Minora of the Medical Society of the County of Montgomery was held at the Amsterdam City Hospital to take suitable action. The following committee on resolutions was appointed: Dr E Harrison Ormsby, chairman, Dr E C LaPorte and Dr Roger Conant. It was also decided to attend the funeral in a body.

The following memorial was adopted: "The medical profession has been stunned by the sudden loss of one of its most distinguished members. Dr Hicks passed away at his home very suddenly last evening from an attack of coronary occlusion which did not seem to him to be of sufficient severity to give up even temporarily the practice which he so dearly loved. He was a bulwark to his patients the community and the profession."

"Great honors in the profession were heaped upon him from time to time including the presidency of the Medical Society of the County of Montgomery the Fourth District Branch of the Medical Society of the State of New York the staff of both the Amsterdam City and St Mary's hospitals, he being the only member of our profession to hold both these offices. He was also

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Chautauqua County

Hundreds of physicians were present at the ninth annual interstate medical meeting at the Chautauqua Institution, held on July 24, under the auspices of the Chautauqua County Medical Society.

Pleading for an American health program directed by a medical man as secretary of health in the Cabinet, Dr. Nathan Van Etten of New York, president of the American Medical Association, slashed at "amateur philosophers" and "log-rolling politicians" whose "superficial humanitarianism has been stimulated by job-seeking welfare agencies."

Reviewing advances in American medical technique in the last century, Dr. Van Etten recalled that Bismarck and Lloyd George both had set up compulsory health insurance as a means of buying the support of their peoples. The medical leader admitted freely that the time is more than ripe for a national health program, but urged that it be established with the utmost care by skilled professional men.

"I would like to see a new national department to be known as the Department of Health headed by a secretary who must have had a medical education and be licensed to practice medicine," he declared.

Speaking of national budgeting for health, Dr. Van Etten fiercely attacked the "stratosphere extravagances" of the Wagner health act and similar "excursions into Utopia."

His own opinion he cast as a credo, declaring:

"I believe that needs for health should be discovered in the smallest political subdivision such as the school district, then referred to the township, to the county, to the state, to the federal authority in that order and that the federal authority should be called upon as infrequently as possible.

"I believe that medical service to the economic indigent and to the medical indigent is the problem of the taxpayer.

"I believe that medical service to these classes of people should be administered by the medical profession and the taxpayer. The medical profession and the taxpayer should provide such needed medical service in tax-supported institutions either free or at a minimum rate.

"I believe that every effort should be made to provide for the average man so that he can prepare for emergencies without throwing himself upon the sources of charity."

Dr. Van Etten praised the speech of Paul V. McNutt before the National Health Council last February, supporting the movement for a national health program.

He also urged local physicians to realize their responsibilities in seeing to it that an eventual health program be professionally sound rather than merely politically expedient for a small number.

Buffalo speakers at a round-table discussion of recent developments were Dr. L. Maxwell Lockie, chairman; Dr. A. H. Aaron, Dr. C. W. Greene, Dr. Frank Leopold, Dr. Frank Meyers

Dr. Aaron, speaking on "Self-medication and Its Dangers," cited statistics to show the great numbers of deaths resulting from refusal to submit to regular examination with the aim of commencing early, supervised care.

Commenting on the unnecessary deaths resulting from cancerous affliction of the abdominal region, Dr. Aaron said, "The vital importance of seeking physical examination for these complaints is apparent, and the inestimable value of a periodic examination is plainly seen when one considers that a diagnosis of a serious disease might here be made even before the symptoms appear."

Erie County

President Wells called a special meeting of the Medical Society of the County of Erie on June 28 for consideration of a proposal recommended by the Executive Committee of the Western New York Medical Plan, Inc., regarding the issuance of a supplementary contract providing for surgical benefits exclusively, as reported in the *Bulletin* of the county society.

Dr. Harvey P. Hoffman, President of the Western New York Medical Plan, Inc., presented with slides various stages of the plan. The following is an abstract of Dr. Hoffman's report with figures revised to date.

After four months of intensive efforts to enroll, there are 263 enrolled subscribers and 334 dependents, as of July 19, 1940.

As of June 30, the earned income of the corporation was \$1,160.62, of which \$812.43 (70 per cent) was allocated for doctors' bills, \$232.13 (20 per cent) for administration, \$69.64 (6 per cent) for field service, \$46.42 (4 per cent) for legal reserve.

The average monthly operating deficit for the four months has been \$1,085.56. At this rate the solvency period of the corporation is five months. Economies, effective July 1, may extend the solvency period, but it is evident that the situation demands prompt action.

It must be admitted that the trustees have been deeply disappointed at the very slow growth of membership. The following factors are chief obstacles to progress:

1. *Subscription Rates* (premiums) are too high.
2. *Co-Insurance Clause*. In the mind of the potential subscriber automatically increases his protection cost by \$10 a year.

3. *Income Limits on Eligibility*. Employers object to this because it does not permit them to treat all employees alike. From a promotional angle "key" employees lose interest in the plan when they find themselves excluded.

4. *Lack of Appreciation of Possible Sick-ness Hazards*. "Not often sick." "Can take care of small medical bills myself."

5. *Lack of Alternate Contract*. Offering more limited benefits at lower cost. There has been a growing demand for low-cost protection for surgical expense, which has been developed to a great extent by the commercial insurance companies. Because of the lower cost commercial companies have been able to insure many groups.

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dent George U. Harvey of Queens will be honorary chairman.

The committee's program includes assisting the borough's industries in establishing first-aid units, organizing a field station in each of the six Assembly districts, instructing various groups in first aid and mobilization of medical care in case of an invasion.

A "catastrophe unit" of doctors and nurses, similar to emergency units at the Bellevue and Kings County hospitals, has been organized at Queens General Hospital to go into action in event of a "major disaster" in the Borough of Hospitals, announced. A fourth emergency unit is being organized at the Morrisania Hospital in the Bronx, Dr. Goldwater said.

The Queens emergency organization will consist of two alternating three-squad units with four doctors and four nurses to each squad. Two of the three squads are on active call at all times while one squad is kept in reserve.

Transportation facilities consist of a specially fitted truck supplemented by the hospital's ambulances.

General headquarters for the activities and for the proposed chain of first-aid stations throughout the county will be at the chamber's offices in the Crescent Plaza Building, Long Island City.

Here all ambulances and mobile first-aid equipment in the borough will be listed, together with emergency facilities available at the hospitals. Classes of teachers to be instructed in first aid will be formed and tutored for the purpose of advising the general public on procedure. All doctors, nurses, dentists, and social service workers will be indexed for instant call.

Other borough organizations have been enlisted in the move and are expected to join the chamber and the other groups soon in actively promoting the plan.

The Queensboro Tuberculosis and Health Association made 2,529 roentgenograms of chests of those in Queens high-school classes and staff during the lately ended school term. Abnormal conditions, mainly of tuberculosis, were found in 8.6 per cent of those examined.

Rockland County

The Medical Society of the County of Rockland held its summer meeting at the Rockland Country Club, on July 3. The meeting was preceded by a golf tournament.

At the scientific session, a very splendid talk was presented by Dr. H. McLeod Riggins, adjunct physician of the Lenox Hill Hospital and associate physician of the Bellevue Hospital, on "The Diagnosis and Treatment of Atypical Pneumonias." Dr. William J. Ryan, superintendent of the Summit Park Sanatorium, Pomona, opened the discussion by presenting x-rays with clinical histories, demonstrating the difficulty occasionally encountered in differentiating between tuberculosis and atypical pneumonias.

A delightful supper was then served at the club—Reported by William J. Ryan, M.D.

St. Lawrence County

Members of the St. Lawrence County Medical Society held a luncheon meeting at Ogdensburg Country Club on July 18.

Wives of members were guests at the luncheon and social program which was carried on during the afternoon. Golf and bridge were enjoyed.

A good number of surgeons and physicians have enrolled in the new Surgical Care Plan co-operating with the hospital plan and service will be inaugurated in St. Lawrence County soon.

Benefits from monthly payments to be made to the plan will include x-ray, anesthesia, basal metabolism, physiotherapy, special laboratory, electrocardiograms, maternity care, physicians' calls and surgery to the extent of \$225 a year. Any illness having its inception after joining the plan will be covered, it is announced.

A Barton Hepburn Hospital is one of the nine-teen hospitals sponsoring the plan as are Potsdam Hospital and the Van Dusen Hospital in Gouverneur.

Westchester County

A panel of approximately 400 physicians, drawn from eight Westchester public welfare areas, are participating in a county medical relief plan which went into operation in June.

Set up after a two-year study by welfare officials and physicians, the board is dedicated to a long-term plan for an improvement of medical relief service and to the arbitration of differences arising among relief clients, welfare workers, and attending physicians, James E. Bryan, executive secretary of the county medical society, said.

Members of the board—selected by a vote of officials in the participating departments—are Charles D. De Vinne, Public Welfare Officer of Mamaroneck, chairman; William Gray, White Plains Commissioner of Public Welfare; James S. Miner, Public Welfare officer of Rye; James Edith Cox, Public Welfare officer of Rye; Mrs. Edith Parker, Assistant Director of the County Department of Family and Child Welfare, and a group of twenty physicians whose nucleus is the public relations committee of the county medical society.

Mr. Bryan said that only five of the twenty physicians selected by the medical society will serve as arbitrators at one time, and that it is the plan to have the chairman of the public relations committee, Dr. Christopher Wood, of White Plains select the five as they are needed.

Participating in the plan at present are the welfare departments of the county, the City of White Plains, and the Towns of North Castle, Harrison, Mount Pleasant, Poundridge, Scarsdale, and Mamaroneck. It is hoped other communities will join the project later.

Under the program, the so-called arbitration board has disciplinary power over participating physicians in connection with regulations laid down by the medical society. The board further may inquire of the welfare officer why the request of a patient, for the assignment of another physician was refused, but may not countermand the decision. Any member physician may, through the board, demand an explanation from the welfare officer if he is removed from a case or if the number of calls on a patient are limited. A two-thirds vote of the board prevails when a welfare officer questions the amount of treatment given or number of calls made by the attending physician.

Professional questions submitted to the board permit separate reports by the physicians on the

vice-president of the Medical Society of the State of New York and served as a delegate to the State Society since 1925. At the time of his death he was serving as trustee of the Amsterdam City Hospital and had charge of maintaining the standards of nursing in this community which are second to none in any metropolitan area in the state.

"He also served as health officer of the city for many years, being instrumental in curbing the spread of contagious disease by the establishment of a contagious hospital at the east end of the city. It is also notable in passing that he performed the first surgical operation in St. Mary's Hospital. He was of an inventive turn of mind and was constantly devising novel pieces of apparatus to give additional comfort to the suffering, particularly in the field of fractures.

"Dr. Hicks's home life, which, generally speaking, is a fair guide as to our personal characteristics, was a dignified and happy mixture in which he maintained affectionate family relationships.

"We express to Mrs. Hicks our deepest sympathy in her bereavement and spread a copy of this memorial on the minutes of our society."

New York County

Dr. S. Adolphus Knopf, of 16 West 95th Street, one of the American authorities on tuberculosis and for forty years a leader in the fight against the disease, died in a New York hospital on July 16 after a week's illness and an operation. He was eighty-two years old.

From 1908 to 1920 Dr. Knopf was Professor of Phthisiotherapy at the New York Post-Graduate Medical School and Hospital, and from 1906 to 1922 he was senior visiting physician to the New York Health Department's Riverside Tuberculosis Hospital. He was a founder of the New York and National Tuberculosis associations. His books and pamphlets on the disease numbered 419 and he was engaged on another work when illness intervened.

Among the many honors awarded to Dr. Knopf were the Alvaranga Prize of the College of Physicians and Surgeons of Philadelphia for his treatise on pulmonary tuberculosis, 1898, the prize of 4,000 marks given in 1899 by the International Tuberculosis Association at Berlin for his essay entitled "Tuberculosis as a Disease of the Masses and How to Combat It," which has been translated into a score of languages.

In the World War Dr. Knopf was a captain in the Medical Reserve Corps, and he was still at his death a member of the Officers Reserve, with the rank of major. He was an active or honorary officer of most of the important tuberculosis associations in this country and Europe and had received additional honors from many. In 1932 he represented the United States at the congress of the International Union Against Tuberculosis held at The Hague.

Oneida County

Fifth Columnists are at work in the medical profession, undermining its high standards and ethics, the Oneida County Medical Society was informed at the Yahnundasis Golf Club by Dr. James M. Flynn, Rochester, president of the State Medical Society, on July 9.

The speaker, addressing doctors of the county at their annual outing and dinner, challenged

them to maintain the prestige of their profession. High fees, poor medical practices, and unethical treatment of patients were listed as policies that tended to lower the rating of physicians.

The society will not meet again until October, then in Rome.

Onondaga County

The Onondaga County Medical Society will soon begin preparing a list of its members who would be physically fit to serve their country in a military way, Dr. Brewster Doust, president, revealed on July 14, as quoted in the Syracuse papers.

He made the announcement after an Associated Press report was received from Albany, where Dr. James M. Flynn, president of the New York State Medical Society, announced that the organization is pledging "all its facilities" to the government in any national emergency.

Dr. Doust said he believed the Onondaga society would "pick out those able to go, and those not able to go," submit its list to the State Society, which in turn would probably submit all lists to the federal officials.

Dr. George J. Gannett, sixty-three, of Syracuse, was instantly killed on July 20, when his automobile was struck by the Empire State Express at a grade crossing west of the city. The doctor halted at the crossing to let a freight train pass, then drove upon the tracks directly in front of the express, which had been hidden by the freight train. Dr. Gannett had practiced medicine in Syracuse thirty-five years.

Dr. William Graham Hinsdale, seventy-eight, who practiced medicine in Syracuse more than half a century and who served on the faculty of the College of Medicine, Syracuse University, died in Crouse-Ingersoll Hospital, where he had been house physician for the past ten years, on July 16.

Dr. Hinsdale was widely known as an authority on the Indians of Eastern United States and the prehistoric Eskimo. He studied Indian lore more than fifty years and was a member of the New York State Indian Board. He was the owner of a wampum belt which entitled him to attend the councils of the Five Nations of the Iroquois.

He discovered former village sites of the Indians and the site of a prehistoric Eskimo village on Smith's island near Brewerton.

Oswego County

The Oswego County Medical Society held a joint meeting with the Woman's Auxiliary at the Pleasant Point Club on July 24.

Queens County

Formation of a Queens Civic Preparedness Committee to prepare against attacks "from within and without" the United States, is announced by the Chamber of Commerce of the Borough of Queens, Long Island City. The committee was organized through the cooperation of the Queens County Medical Society, the Queensboro Tuberculosis and Health Association, the Municipal Health Center of Queens, and the Queens Dental Society. Dr. H. P. Mencken, chairman of the public health committee of the Chamber of Commerce, will be chairman of the committee and Mayor F. H. LaGuardia and Borough Presi-

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Editorial

Complimentary but Not Practical

Conspicuously lacking in the membership of the National Defense Council is any representative of the medical profession, to the best of our information. While the implication that medicine is so well coordinated with industry, the armed forces, and civil institutions as to need no representation is inescapable and complimentary, it is hardly practical.

It is true that the medical profession is effectively organized for the provision of the highest quality of medical service, it is true that the American Medical Association and its component state and county societies have shown their desire to promote and facilitate in every way the program for national defense as well as to support any rational, nonpolitical program to supply medical service for civil needs if such a program is proved to be practical and needed, it is true that the medical profession, *because of its own ethical standards*, presents no problem either to government or to industry in the matter of strikes, sitdowns, slowdowns, or breakdowns, it is true that it is not bored from within by subversive elements, although assuredly it is bored from without by elements that may or may not be subversive, inversive, reversionary, or just "versive", it is true that it works twenty-four hours a day, seven days a week, fifty-two weeks a year perhaps in violation of some law or new thought in social progress which it has not had time enough yet to discover, it is true that it serves efficiently the public health, industry, private illness, and the community in flood, fire, disaster, and death, but

There must certainly arise in the course of the program for national defense some few little things that nobody has thought worth bothering much about. Influenza, for instance, adequate domestic supplies of opium, camphor, and quinine, efficient medical care for the welfare clients, venereal disease control, rehabilitation of relief recipients for really active shovel duty—any number of details

board which are made to the lay members. A quorum consists of six members—three physicians and three welfare workers.

Dr Lisle B Kingery, head of the urological department, chairman of the Medical Board, and president of the attending staff at Grasslands Hospital, East View, died in the Flushing Hospital, on July 11.

Dr Kingery, a resident of White Plains for fourteen years, suffered a heart attack while visiting the New York World's Fair, and was taken to the hospital. He was forty-six years old.

In December, 1939, he was elected chairman of the Grasslands Medical Board and staff president, succeeding Dr F Duncan Barnes, of New Rochelle. He formerly was vice-chairman of the board and vice-president of the staff.

Dr Kingery was a member of the Medical Advisory Board of St Agnes Hospital, White Plains, and was affiliated with the New York Hospital, Westchester Division, and the Northern Westchester Hospital in Mount Kisco.

Wyoming County

An entirely new system of caring for medical welfare patients will go into effect in Perry.

Under the new plan agreed upon jointly by Perry physicians, the town board, and the welfare department, a clinic will be established in the village building. Five Perry doctors will rotate in two-week periods having charge of the clinic. All welfare patients will be cared for by the doctor during the two weeks he is in charge.

The new setup is expected to bring decided savings to the town. Welfare Officer Forrest Gregory estimates this will be about 40 per cent over present costs, with no diminution in service.

During the past few years the average annual cost has been approximately \$1,975.

Under the clinic system, the town will pay a set price far below the yearly average, which will be divided equally among the five participating physicians. Forty per cent of the annual cost will be reimbursed by the state.

The community nurse's room in the village hall will be available for the clinic. Miss Marion R. Iannello, community nurse, will be pressed into service to aid in promoting the clinic. Her services are available at no additional cost.

The *Perry Herald* declares that "The plan appears outstanding in every way and is a credit to the medical fraternity of Perry. Without their whole-hearted cooperation it could not be put into operation. Their attitude in taking on this plan as a civic responsibility with a strong desire to lower medical costs is most commendable."

While decided savings are in view, those welfare patients who require medical aid will in no way suffer, their ills will receive the same ministrations as previously.

Briefly the plan operates as follows: All medical care given welfare clients will be given through the process of the physicians functioning as a clinical group. Instead of going to a doctor's office, the patient will go to the clinic, during hours established by the practitioners.

A complete central index will be maintained at the clinic, open and available to all physicians. Thus case histories will be kept on all welfare patients and will be used as follow-ups when a new doctor takes over for a two-week period.

The plan was evolved after several months' careful study by the town board and welfare department. It has the tacit approval of the County and State Department of Public Welfare.

Deaths of New York State Physicians

Name	Age	Medical School	Date of Death	Residence
Don Stevens Adams	34	Harvard	December 4	Warsaw
Edgar J Foote	80	Buffalo	May 1	Williamsville
Walter W Fray	46	Harvard	July 10	Rochester
Wilton D Garrett	82	N Y Univ	April 8	West Winfield
Horace M Hicks	77	Hom Chicago	July 19	Amsterdam
William G Hunsdale	78	Tulane	July 15	Syracuse
Lisle B Kingery	46	Cornell	July 11	White Plains
S Adolphus Knopf	82	Bellevue	July 15	Manhattan
William T McMannis	77	P & S N Y	July 14	Manhattan
Frances W Monell	89	N Y M C & H for Women	July 13	Great Neck
Abdul M G Mussawir	69	Beirut	July 14	Brooklyn
Ransom J Parker	69	P & S N Y	May 3	Manhattan
Max Rosebery	71	P & S N Y	July 14	Manhattan
Purvis A Spain	66	Univ & Bell	July 13	Brooklyn
Isaac E Van Hoesen	58	Albany	July 10	Coxsackie
Charles L Weisberg	42	Univ & Bell	April 30	Bronx

those based upon an appeal to humanitarianism or realism or—in view of what has happened in Norway, in Holland, and in France—on a kind of patriotism characterized by Samuel Johnson as the last refuge of a scoundrel. No Grecian horse had entered Troy if Trojans had not brought it in.

“What Diomede, nor Thetis’ greater son,
 “A thousand ships, nor ten years’ siege had done—
 “False tears and fawning words the city won” *

* *The Aeneid* Dryden’s Trans

The Good Companions

Have you a case of “war jitters”? Has the fifth column of worry got you down? Does the shrinking margin of your personal security revive the symptoms of your stomach ulcer, gallbladder disease, or unbalance your thyroid secretion? Do you wake suddenly in the night asking yourself “Whither are we drifting?” Have you a condition bordering on anarchy in your anxiety states? Have you found something new in your neuroses?

Relax. Take a trip to the country. Leave your radio at home. Leave a note for the milkman, discontinue the daily newspaper and get out into the country, into the fields, especially into fields of tall grass, under the stars! From now into the early fall if you follow this advice, the friendly and harmless chigger will soon divert your mind. He does not transmit any disease according to the U S P H S, and does not burrow into the skin nor embed his body. He feeds on the upper layers of the skin after this tissue has been dissolved by a substance which he injects into it. This substance is a sovereign remedy for any neurosis which may be turning your life into a pretzel bender’s holiday, for it causes the most intense itching. If you can still worry about anything else while submitting to a mild infestation with chiggers, your time would be better spent in the care-free company of some good alienist.

But assuming that you are organically sound and that, cured of your “war jitters,” you wish to rid yourself of your therapeutically good companions, it may be found advantageous to apply a thick lather of soap, let it remain ten minutes or longer, wash, lather again, and rinse thoroughly with clear water *. If this is ineffective, try kerosene or 95 per cent alcohol. If you have no kerosene or alcohol you may console yourself with the thought that “after the chigger has become engorged with food, it loosens its hold and falls off.”

* *Pub Health Rep* 55 No 29 (July) 1940

While we have the highest respect for the abilities of Mr Knudsen, et al, and appreciate the compliment to the lately little recognized efficiency of the medical profession in not including a medical coordinator on the National Defense Council, we still insist that it is these little oversights, these small neglects that may prove embarrassing sometime

"For want of a nail "

Blueprint for Tyrants

"This barbarian tyranny," writes Machiavelli* to Lorenzo de' Medici in 1512, "stinks in all nostrils " The medical profession can well afford to note the words and advice of this sincere though too supple a republican For, on the principles and infringements of the moral code suggested to Lorenzo, derived from a practical philosophy based on history, he developed statecraft into a science of a repulsive order "A display," says Macaulay, "of wickedness cool, judicious, scientific, atrocity "

It may seem strange to urge upon the profession that they read first *The Prince*, and second, Macaulay on Machiavelli But we do so in the light of developing historical events here and abroad in which the thought, the opinion, and the lives of medical men are sure to be involved For we enter, as this is written, upon a new phase of American life—the development of a great national army, the mobilization for defense of huge national resources, the foreign attempt at mobilization of American sentimentality and exploitation of business and professional greed—which is being forced upon us by those abroad who have carefully studied Machiavelli, probably more carefully than Domitian ever studied Tiberius

The cynical exploitation of human frailties and gullibility began on a large scale with the Polish invasion, reached a climax with the decay and the collapse of France, and is now being focused upon us, according to the news dispatches, with the end in view to use for the necessities and purposes of the usurper, the pitiful plight of the invaded countries upon which all seven vials of the apocalypse have been poured forth and shaken out—"slaughter, famine, beggary, infamy, slavery, despair," and treachery

In the forefront of our national reaction to the mechanized brutality of Europe, both western and eastern, stands the medical profession Opposed in principles and objectives to nazism and communism, it must yet recognize in bitterness that the essence of war is violence Let all proposals, from whatever source, be carefully and thoughtfully examined by a well-informed profession—especially

* *The Prince*

Symposium on Fractures Involving Joints

FRACTURES INTO AND AROUND THE KNEE JOINT*

CHARLES M. ALLABEN, M.D., Binghamton, New York

OF 1,898 fractures treated at the Binghamton City Hospital over the five-year period from January 1, 1935, to January 1, 1940, only 80 were into the knee joint. Thirty-one of the 80 were of the patella, 2 involved both femur and tibia, 11 the femur alone, and 36 the tibia alone. The hospital has an average daily census of over 300 patients, approximately half private and half service patients, so that the figures given present a fair picture of the relative frequency of knee-joint fractures.

In this paper I have omitted fractures of the patella and have classified fractures around the knee joint as follows:

1 Fractures of the Lower End of the Femur

- (a) Supracondylar fractures
- (b) Intracondylar or the so-called T fractures
- (c) Fractures involving a single condyle.

2 Fractures of the Upper End of the Tibia

- (a) Fractures or avulsion of the tibial spine
- (b) T and Y fractures of the head of the tibia.
- (c) Fractures involving either the lateral or medial condyle

In further discussion of these fractures I will omit many of the symptoms and signs with which you are all familiar, but there are certain mechanical reasons for displacement of fractures that have a direct bearing on the symptoms and signs present and also on the method of treatment to be instituted to overcome these

displacements. These reasons should not be overlooked.

Supracondylar Fractures of the Femur

In supracondylar fractures of the femur there is usually a posterior and lateral displacement of the lower fragment due to the backward pull of the gastrocnemius and to the medial pull of the adductor magnus on the upper fragment.

Restoration of femoral alignment is the aim of treatment. If the patient is seen at once and the fracture is found to be roughly transverse, reduction by manipulation may be attempted immediately. With the knee flexed to 45 degrees, traction is exerted and the fragments are brought into line. The traction is released, and the fragments are allowed to engage. With the fragments held in position and the knee flexed to 45 degrees, a long plaster spica extending from the waist to toes is applied.

In the oblique or comminuted types we believe that traction through the tibia with the hip and knee flexed and the leg on a Braun splint is the treatment of choice. By traction and flexion the backward displacement of the lower fragment tends to be corrected, while the medial displacement may be corrected by direct pressure over the lower end of the upper fragment. If after two or three weeks the fragments remain approximated and the swelling has subsided, a long plaster cast may be applied, or, if one wishes to continue traction, the leg is left on the splint. To avoid stretching of the knee-joint capsule, skeletal traction may be replaced by adhesive traction. Later on, the covering of the splint may be tempo-

* Lantern slides illustrating different types of knee-joint fractures were shown at the reading of this paper.

Quarterly Journal of Studies on Alcohol

We highly commend the studies that are being undertaken and centered in New Haven on the subject of alcohol and its effects. For too long a time, alcohol in its various forms and uses has been interwoven with our social, economic, and recreational activities in a haphazard manner, grounded in custom and conviviality originally, and subsequently developing into a Frankenstein with a Jekyll and Hyde personality.

In the *Quarterly Journal of Studies on Alcohol* of which the first number appeared in June, 1940, we note a serious and scientific approach to the subject ranging from "High Proof of Liquor and Alcoholism," by Yandell Henderson, Ph D, of Yale University, through "Alcohol: A Study of Social Ambivalence," by Abraham Myerson, M D, Director of Psychiatric Research, Boston State Hospital, "Personality Factors in Alcoholic Addiction," by Nolan D C Lewis, M D, Director, New York State Psychiatric Institute and Hospital, "The

Influence of Alcohol on the Adequacy of the B Vitamins in the American Diet," by Norman Jolliffe, M D, Associate Professor of Medicine, New York University College of Medicine, Medical Reviews, and Current Literature on Alcohol.

The Editorial Board and the Editorial Committee Representing the Research Council on Problems of Alcohol which is responsible for the Journal, comprising as they do the names of Howard Haggard, Ray Lyman Wilbur, Norman Jolliffe, Winfred Overholzer, Karl M Bowman, to mention only a few among many others of the highest scientific attainments, inspire confidence that as the studies progress we may at last expect authoritative data. This is badly needed, especially in medicolegal work. With the speeding up of industry, transportation, and the life activities of the citizen, the importance of a thorough understanding of the role of alcohol cannot be too greatly emphasized.

ATTENTION**EVERY DOCTOR IN THE STATE OF NEW YORK****Medical Preparedness**

THE State Society questionnaires have been mailed to all physicians in each county. When filled out, they are to be returned to secretaries of the county medical societies concerned. An addressed envelope was enclosed with each questionnaire.

In this way the local committees on medical preparedness can classify physicians as in position to do the different types of government service or civilian medical care.

PETER IRVING, M D,
Secretary

Avulsion and Fracture of the Tibial Spines

Avulsion of the internal tubercle of the tibial spine is considered to be a lesion of the cruciate ligament. When there is a fracture of the external tubercle, the cruciate ligament is not involved. Fractures of the external tubercle may occur alone or in conjunction with other fractures of the tibial plateau. It is usually a crush fracture caused by the sharp inner margin of the lateral femoral condyle in abduction and flexion strain of the knee joint. The most important sign is limited extension of the knee with bony block. There are so many other causes for similar symptoms that the x-ray must be used to differentiate.

With the knee in flexion and with pressure being exerted over the patellar ligament and underlying fat pad, reduction may sometimes be accomplished by manipulation. If reduction is accomplished, a long plaster-of-paris cast is applied and the knee immobilized for four weeks. If the block is not released or the knee does not fully extend, the fragment should be exposed and removed.

Fractures Involving the Condyles of the Tibial Plateau

In T fractures of the head of the tibia there may or may not be marked displacement of the fragments. In the compression type of the whole plateau the central portion may be driven down, spreading the condyles wide apart. The leg may be either in a valgus or varus position. There may be some shortening. Even with slight displacement of the fragments the surface of the plateau is disturbed, and any irregularity of the surface is of vast importance.

In these fractures there is no alternative but traction if they are to be treated conservatively. Manual traction is first used, and by manipulation an attempt is made to reduce the fragments. Traction is then applied. Either adhesive or skeletal traction through the lower tibia is used, and the extremity is put up in a Thomas splint. Personally I prefer skele-

tal traction, thus avoiding slipping adhesive, uneven blocks, etc.

If the displacement of the fragments remains after an attempt has been made to correct by traction, open reduction may be done. Operation should be approached with care as the condition lends itself to infection into the knee joint if any abrasions of the skin are present. If open reduction is done, one has a separate problem to meet in nearly every case, the aim being in all cases to replace the fragments and to hold them in place by pins, nails, or screws, whichever may seem best at the time.

Bohler treats these cases by early manipulation under local anesthesia and keeps the area compressed with rubber sponges with the leg in a Cramer splint until the swelling subsides. He then reduces the fracture by screw traction, places the leg in a long plaster, and continues traction for six weeks.

Another method of treatment in fractures of the tibial plateau which strongly appeals to me is the one in which a wire or pin is placed through the lower femoral shaft above and another through the shaft of the tibia below the fracture, the fracture reduced by screw traction and manipulation and a long plaster cast applied with the wires or pins incorporated therein. Thus, the fragments are held fixed against the action of muscle spasm. Further traction becomes unnecessary.

Although I have not used this procedure as yet, it is my intention to do so when next the opportunity presents itself.

Fractures of One Condyle of Head of Tibia

Fractures in which one condyle of the tibia is involved also present a serious problem. Here, as with both condyles fractured, the joint surface is disturbed. When either of the condyles of the tibia is fractured, there is usually a downward displacement of the fragment and the leg is in the direction of the fracture. The lateral ligament retains its attachment to

rarily removed, and, with a rope attached to the foot over a pulley above, the leg may be flexed and extended by the patient himself

Open reduction is seldom required. Rare instances of muscle interposition or obstructing bone fragments may occur, but these are not usual.

In using skeletal traction in low femur fractures, I prefer traction through the upper tibia rather than through the femur. One thus avoids entering the capsule of the knee joint and may also avoid changing a posterior displacement into an anterior, as may happen when femoral traction is used.

Intercondylar or T Fractures of the Femur

T fractures of the femur present a real problem. There is usually marked effusion of blood into the joint with backward displacement of the lower fragment as well as displacement of the condyles. The upper fragment may be driven down against the patella or into the joint. There is instability of the joint and often marked deformity. Because of the close proximity of backward displaced fragments to the deep vessels, direct manipulation is contraindicated. Before reduction is attempted, the blood in the distended joint should be aspirated.

Reduction may be attempted by flexing the hip and knee and using steady, firm traction on the leg. Skeletal traction through the tibia is necessary if immediate operation is not indicated. If there is still displacement of the condyles, after skeletal traction is applied and the leg placed on a Braun splint, correction may be attempted with the hands or by the use of a Scudder or a carpenter's clamp.

When a clamp is used, felt should always be placed under it to avoid damage to the skin. After reduction, a firm bandage is applied over the felt, and traction is continued.

The foregoing treatment is not always successful. If reduction is not accomplished after a fair trial, open reduction must be done. In some cases operation

may be indicated in the beginning. When operation is decided upon, one must meet the situation as he finds it. The fragments must be reduced as nearly as possible to their anatomic position and fixed in place. Screws or nails may be used, or the fragments may be transfixed by long pins or rigid wire.

Fractures of One Femoral Condyle

Fractures of one condyle of the femur do not present so difficult a problem as the T and Y fractures, but nevertheless they must be treated with great care so that a good result may be obtained. Whether it be the lateral condyle or the medial the displacement is usually upward. When the lateral condyle is so displaced, one finds a valgus position of the leg, if it is the medial condyle, one finds a varus position of the leg. Inasmuch as the lateral ligament remains attached to the fractured condyle above and the tibia below, the fractured condyle can, in most instances, be brought back into place. This is done by placing the leg back into its normal axis or a little beyond and at the same time putting backward and downward pressure against the fragment. A close-fitting spica is then applied from waist to toes, and the limb is kept up for eight weeks. If x-ray shows the fragment in an unsatisfactory position after the cast is applied, open reduction is indicated. After a week or ten days when the swelling has subsided, one may expose the fragment through a longitudinal incision toward the back of the joint and fix the fragment with two or three nails.

Fractures of the Upper End of the Tibia Involving the Knee Joint

Fractures involving the tibial plateau are numerous and varied in character. The broad upper end of the tibia with its rather abrupt narrowing into the shaft leaves this portion of the bone open to injury by sudden force exerted through the femoral condyles from above or by sudden force from below forcing it up against the condyles of the femur.

TABLE 1

Injury	Number of Cases	Average Age
Traumatic subdeltoid bursitis	300	44
Fractured surgical neck of humerus	149	59
Scapulohumeral dislocation without fracture	89	52
Fractured scapula	51	46
Acromioclavicular separation	46	38
Rupture supraspinatous tendon	18	47
Fractured greater tuberosity alone	17	47
Dislocation with fractured greater tuberosity	15	50
Dislocation with fractured surgical neck	6	62
Fractured acromion	5	51
Total	696	50

pulohumeral fracture-dislocation. Fractures of the scapula and of the greater tuberosity alone have but slight therapeutic and end-result importance. In Table 1 fractures of the acromion have been separated from other scapular fractures merely to draw attention to their relative infrequency. It is often stated that the overhanging acromion protects the shoulder from injury. Such a statement would appear to be anatomic speculation.

The age incidence establishes clearly that shoulder injury is principally an injury of adult life, the more serious injuries occurring late in adult life. The most serious of the shoulder injuries is dislocation with fracture of the surgical neck (average age 62). The most frequent fracture is that of the surgical neck (average age 59).

In Table 2 fractures of the humeral neck are classified in three age groups (a) before closure of the epiphyses, (b) the vigorous working years, and (c) the advanced years.

The incidence of frequency clearly establishes that the large majority occur in advanced life. Seventy-six per cent of the cases had an average age of 65 years. Furthermore, the functional end-result

seriousness of the injury increases greatly with age. The number with no disability decreases with age. The length of time for recovery increases with age—twice as long in middle life as in youth.

The economic end-result seriousness does not parallel the functional end-result loss, because beyond 50 years of age perfect shoulder function becomes of less and less importance. In fact, one cannot tell much about the time required to reach maximum improvement in the advanced age group, because over half of the patients in that group refuse any more attention or do not appear for observation after they can get the hand on the back of the head. They are not interested in perfection. They say, "Oh, it will get all right after awhile." Of the 114 cases in the over-50-year group, 41 were seen only for diagnosis and initial reduction, all later care being rendered by someone else, and of the 73 cases used for these statistics, 53 per cent were not seen after the eighth week.

The end results, classified by methods of treatment in the three age groups, of humeral neck fractures are set forth in Tables 3, 4, and 5.

TABLE 3—HUMERAL NECK FRACTURES FIFTEEN CASES UNDER 20 YEARS OF AGE

Number of Cases	Anesthetic	Type of Immobilization	No Disability, Percentage	Weeks to Maximum Improvement
4	None	Sling 3½ wks	100%	4
11	General	Spica 4½ wks (Two open operations)	100%	8

In the youth group of 15 cases, average age of 10 years, none had any final disability. Four had no displacement of fragments, were given no anesthetic, were given sling support only for three and one-half weeks, and had return of

TABLE 2—FRACTURES OF THE SURGICAL NECK OF THE HUMERUS

Age Grouping	Number of Cases	No Final Disability Percentage	Final Disability	Percentage of Disability When Last Seen	Weeks to Maximum Improvement
Up to 20 yr (av 10)	15	100%	None		6.7
20 to 50 yr (av 41)	20	75%	25% had 15%		13.0
Over 50 yr (av 65)	114	31%	16% had 20%	53% had 20% at 8 wks.	Unknown
Total	149				

the fractured condyle of the tibia The method of conservative treatment depends largely on this fact, since by drawing the leg to the opposite side the fragment is drawn up into position and may be pushed into place by the hand or by a clamp This may be done under local anesthesia If successful, a plaster cast from groin to toes is applied, retaining the fragment in position Prolonged immobilization in plaster is advisable Care should be taken that the knee is not overextended

Bohler puts these fractures up in a posterior splint for eight to ten days or until the swelling subsides, and then he reduces them again if it is necessary

These fractures are often complicated by disturbance to the lateral ligament or by injury to the cartilage of the plateau or femoral condyles, to the cruciate ligaments, or to the meniscus If one or more of these complications exist, open operation is indicated A slight irregularity or a depression of part of the plateau may cause considerable disability, and I feel that if more open operations were done results on the whole would be more satisfactory

When operation is decided upon, the fragment is exposed through a lateral incision, placed in position, and held by pegs, small screws, or pins Sometimes it is necessary to restore the cancellous bone to its normal level without metal fixation

In the treatment of all fractures in-

volving the tibial plateau one must always keep in mind that the aim of treatment is anatomical restoration of the fragments

Aftercare in these cases is important. Because this portion of the tibia is of cancellous bone and also because of the large amount of leverage present, delayed weight bearing is emphasized In some instances it may be desirable to avoid weight bearing for six months This can be accomplished by the use of a long caliper brace or by instructing the patient in the use of crutches End results cannot be estimated before three and one-half to six months or longer

Sprain Fractures

Just a word should be said about sprain fractures These fractures are results of abduction or adduction injuries in which there occurs a crushing down of the margin of the tibial condyle on the side toward which the leg is forced, or to an avulsion or pulling up of a fragment of the condyle on the opposite side

Sprain fractures may be treated by traction followed by a long circular cast. The leg is drawn to the side of the injury to relax the lateral ligament, and the knee is slightly flexed Some prefer to use a cast from the beginning

In all cases of fractures about the knee joint in which a cast has been used, it is good practice to apply an Unna paste boot or an elastoplast bandage after the cast is removed, with the purpose of preventing swelling

FRACTURES INVOLVING THE SHOULDER JOINT

EDWARD T WENTWORTH, M D , F A C S , Rochester, New York

IN A group of 696 shoulder injuries that have come under our attention during the past twenty years, fractures and fracture-dislocations occupy the relative

frequency and relative age incidence shown in Table 1

This study is limited to fracture of the head and neck of the humerus and sca-

Rather, the seeming choice represents a transition from immobilization to mobilization treatment. The spicas and abduction splints were almost all used before 1925. Through the transition period (1925-1930) patients were warned that carrying the arm in adduction—in a sling, swathe, or gauge halter—would probably give them more limitation in elevation of the arm than if they used an abduction splint or spica but that the treatment period would be much easier to go through. Practically all of them preferred to take the chance in order to escape the ordeal of a big cast or awkward splint.

During the period of transition we often used a molded plaster-of-Paris shoulder cap—I presume to impress the patient that protection was being provided as much as to provide protection. For the past ten years we have expended our 'selling energies' persuading people that they won't need aftertreatment if they will only keep the arm swinging in pendulum fashion.

Many of these fractures of surgical neck and greater tuberosity in the aged show only insignificant displacement of fragments, and the fragments are stable. Fifty-six per cent of this series had no anesthetic. Twelve per cent had local injection of novocain. Many of them need no reduction. The men with stable fragments need scarcely any more protection after reduction than carrying the hand in the side pocket part of the time plus a little care in changing clothing. The woman with stable fragments needs nothing more than a gauge halter, wrist to neck. But most of the ladies are fearsome of so little fixation, so a swathe is usually added for a few days. Often a roll of sheet wadding, powdered and hung in the axilla, gives them satisfaction.

A fractured shoulder can be treated perfectly well in a spica of plaster of



FIG 2 Three cases of dislocation with fracture of greater tuberosity. In each instance the upper tracing before reduction and the lower tracing after reduction show how, with reduction of the dislocation, the greater tuberosity falls into position.

Paris. None of the 11 children so treated had any permanent disability. Eight of the 9 in the middle-age group so treated had no permanent disability, and 4 of the 14 in the above-50-year group so treated had no permanent disability. But the chances of complete success decrease with age, and such complete fixation is very rarely needed in the aged individual. Expressed a little differently, following humeral neck fracture, 73 per cent of the youths, 45 per cent of the middle group, and 19 per cent of the over-50-year group were treated with spica (none since 1930). Stability is much more difficult to secure in children. It is also much more important in youth and middle age than after the end of the vigorous working period of life. Hence there is a decrease in the number of spicas as the age increases, with practically complete abandonment after the age of 50. In the over-50-year group where spicas were used, it was found that very little abduction was needed. The adducted

TABLE 7—HUMERAL NECK FRACTURES SEVENTY-THREE CASES OVER 50 YEARS OF AGE

Number of Cases	Type of Immobilization	No Disability, Percentage	Final Disability	Disability When Last Seen
40	Sling 2 1/2 wks.	42%	3% had 25%	55% had 20% at 8 wks.
13	Traction 3 wks.	none	40% had 20%	34% had 20% at 12 wks.
6	Abduction splint 4 wks.	16%	34% had 25%	50% had 30% at 7 wks.
14	Spica 4 1/2 wks.	23%	30% had 20%	35% had 25% at 6 wks.

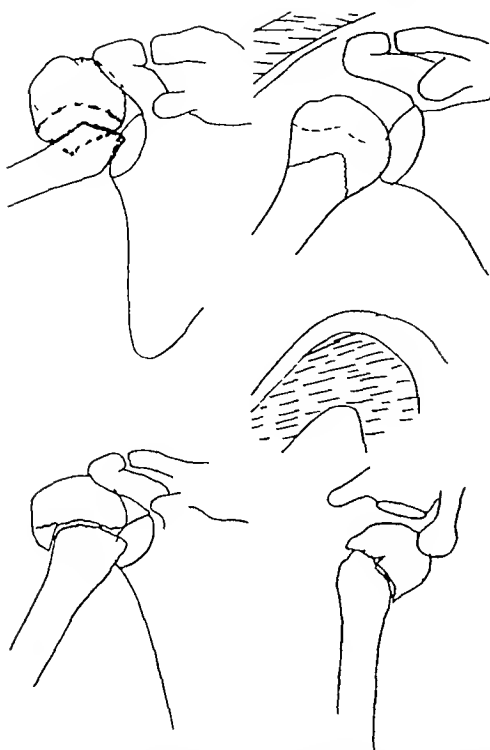


FIG 1 The upper two tracings show a fracture of the metaphysis in a child 13 years of age, before and after reduction—spica fixation. The two lower tracings show, in the A-P and lateral views before reduction, fracture involving epiphyseal plate and metaphysis in a 13-year-old youth

full motion in four weeks. Eleven required general anesthesia for reduction (9 closed, 2 open) and were immobilized in spicas for an average of four and one-half weeks. They regained full motion in an average of eight weeks. Two were partially through the epiphyseal plate and partially through the metaphysis. The others were metaphyseal. The choice in method of treatment was based entirely on stability, or lack of it, of fragments after reduction (Fig 1).

There were 20 cases in the middle age group, average age 41 (Table 4). Nine had fracture of surgical neck only, 7, fracture of surgical neck and greater tuberosity, 4, fracture of surgical neck complicated by other arm fractures. Seventy-five per cent had no final disability, 25 per cent averaged 15 per cent disability. The choice in method of treatment was based largely on stability, or lack of it, of fragments after reduction. Injury to other parts requiring confinement to bed was a factor where traction was used.

Successful end results were dependent more upon accurate reduction than upon early mobilization. In fact the best scoring was obtained following spica fixation for five weeks and the poorest scoring where only a sling was used for three weeks. Where the greater tuberosity was also fractured, much more care was used to replace the fragments accurately and to fix them by spica in enough abduction to remove distracting force from the greater tuberosity than was the case where the neck alone was fractured and only a sling used.

The average age of 114 cases treated in the over-50-year group (Table 5) was 65. Statistics, however, are based on 73 cases only, because of lack of end-result information in the others. In reduction no anesthetic was used in 41, local anesthesia in 9, and general anesthesia in 23. Thirty-one per cent had no final disability, 16 per cent averaged 20 per cent final disability, and 54 per cent had 20 per cent disability when last seen at eight weeks.

The choice in method of treatment was based but little on the degree of stability of fragments following reduction.

TABLE 4—HUMERAL NECK FRACTURES TWENTY CASES BETWEEN 20 AND 50 YEARS OF AGE

Number of Cases	Anesthetic	Type of Immobilization	No Disability	Final Disability	Weeks to Maximum Improvement
7	None	Sling 3 wks	5 or 71%	2 or 29% had 35%	10
2	2 general	Traction 4½ wks	1 or 50%	1 or 50% had 20%	10
2	1 general	Abduction splint 4 wks	1 or 50%	1 or 50% had 5%	17
9	0 general	Spica 5 wks	8 or 88%	1 or 12% had 10%	15
(Two open reductions)			2 or 100%		12

TABLE 7—SIX CASES OF DISLOCATION WITH FRACTURED SURGICAL NECK. (AVERAGE AGE 62, 10 YEARS OLDER THAN IN UNCOMPLICATED DISLOCATION)

Number of Cases	Treatment	External Fixation	Percentage Loss of Use Final	Remarks
3	Closed reduction	Sling	20%	No nerve injury or circulatory damage
1	Removal of head	Sling	25%	Failure in attempt at closed reduction
1	Open reduction internal fixation	Sling	50%	Infection and ankylosis. Refused treatment
1	Untreated		75%	No scapulohumeral motion

a man of 300 pounds. The 2 in which attempts at closed reduction failed were not particularly robust and certainly were not obese.

Although attempt at closed reduction is often discountenanced, this experience tends to show that if violence in reduction is avoided no harm is done and that if reduction is obtained the results are satisfactory. In contrast to the 3 cases reduced by closed method, ending in only 25 per cent disability, are the other 3 cases (Fig 3).

In summary, the untreated case had 75 per cent disability, the operated and infected case had 50 per cent disability, and the successfully operated and the 3 closed reduction cases had 25 per cent disability. The high disability rate is due to loss of motion—not to pain.

The necessary immobilization, because of unstable bone fragments during a healing period in the presence of extensive capsular and paracapsular injury, results in marked periarthritic fibrosis which is difficult to overcome.

The tracings in Fig 4 represent troublesome sequelae. The upper tracings are of the original injuries. The lower tracings are of the situations four years later. On the left is a man 62 years of age who developed calcium deposits in the supraspinatus and pectoralis major tendons. Treatment was limited to rest and light activity with an end result of only 5 per cent functional loss. The central case, borrowed from a confrere, is a man 47 years of age who also developed calcium deposits in the supraspinatus and pectoralis major tendons. At two and one-half years and again at three and one-half years after injury these exostoses were surgically removed with an end result of 50 per cent functional loss. The case on the right is a woman 48 years of age. At-

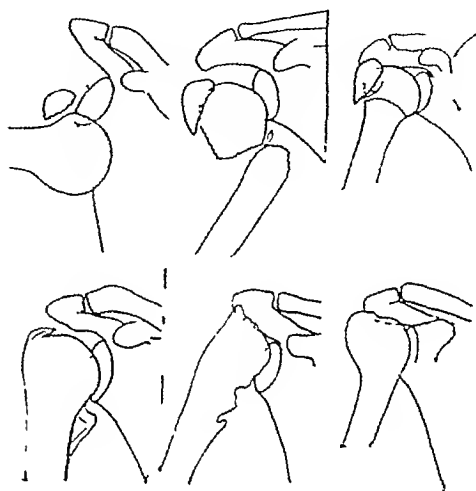


FIG 4.

tempt by manipulation to reduce the displaced greater tuberosity failed. The patient refused open reduction. The end result is massive hypertrophy of the greater tuberosity and 40 per cent functional loss.

The tracings in Fig 5 represent what might be considered severe scapular fractures. On the left is a girl 23 years of age. The glenoid is split, and fragments are separated. She had no treatment except limitation of activity. There was no functional loss at three months. On the right is a man 31 years of age with a badly comminuted blade. This is the only 1 of 56 fractures of the scapula in which open operation was used. After operation there was still deformity, yet four months later there was no functional loss.

In our experience shoulder injury is principally an injury of adult life, the more serious injuries occurring late in adult life. The amount of functional loss tends to increase with the age of the pa-

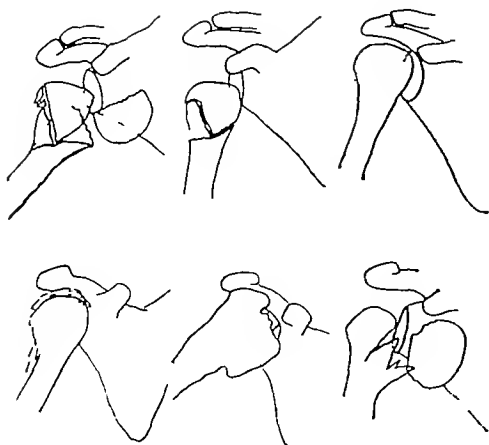


FIG. 3. The upper three tracings show dislocation with comminuted fracture of neck in a woman 39 years of age: the first, preoperative, the second, ten days after removal of fragment constituting 80 per cent of the head, the third, four years later—25 per cent loss of function.

The lower left tracing represents dislocation and fracture of neck in a man 73 years of age two months after open reduction, internal fixation, and infection. The lower central tracing is same case four years later—50 per cent loss of function.

The lower right tracing represents condition six months after injury in man 58 years of age who refused all treatment, early or late—75 per cent loss of function.

position was almost always satisfactory.

In cases of dislocation with fracture of the tuberosity (average age 50), 27 per cent had spicas. In dislocation with fracture of the neck (average age 62), none had spicas. The difference does not lie in the age, however, as much as in the desire to remove from the fractured greater tuberosity the distracting force involved in the adducted position (Fig. 2).

Of the 110 scapulohumeral dislocations, 21 were complicated by fracture. 15 of the greater tuberosity and 6 of the neck of the humerus. None of them had clinical evidence of rupture of the supraspinatus tendon. It is sometimes stated that in a subcoracoid dislocation, either the greater tuberosity must fracture or the supraspinatus rupture. Proof is certainly not found in this experience. Eighty per cent of these dislocations had neither. The end results in 15 cases of dislocation complicated by fracture of the

TABLE 6.—FIFTEEN CASES OF DISLOCATION WITH FRACTURED GREATER TUBEROSITY (AVERAGE AGE 50. SAME AS IN UNCOMPLICATED DISLOCATIONS)

Number of Cases	Type of Immobilization	No Disability	Final Disability
12	Swathe for 3 wks.	4 or 33%	3 had 20% at 8 mos
3	Spica in 50° abduction, 30° flex., 4 1/2 wks.	2 or 66%	1 had 25% at 4 mos.
			5 unknown

greater tuberosity are shown in Table 6. In only 1 case was there no displacement of the tuberosity. In all cases reduction of the dislocation resulted in replacement of the tuberosity. In no instance was internal fixation of the tuberosity used. (Since this review was made, we have had 1 case in which a cortical cap of bone, constituting the tendinous attachment to the greater tuberosity, had to be fixed with silk sutures after reduction of the dislocation.) The cases were largely office treated only, and in one-third of them no end result is known because they were seen for diagnosis and original reduction only. One-third of the cases had no final disability, and one-third had 20 per cent final disability. The lesion is a serious one, warranting very careful attention.

Of the 3 cases of dislocation with fracture of the surgical neck reduced by the closed method (Table 7), 2 had complete separation of shaft and head, one was subglenoid dislocation without displacement of shaft. Reductions were carried out under general anesthesia by traction gradually applied with the arm in adduction, then maintained while abduction was very carefully done until the elbow was well above the shoulder level. With the arm in that position and under traction, the humeral head, in axilla, was gently manipulated and pressed upon. This process was accompanied by rotations of the arm externally and internally until a stable position was found. The arm was then slowly replaced in adduction for x-ray. This process was repeated if necessary. There seems to be no way, except by trial, of determining which case can be reduced. One of these cases with a completely separated head and shaft successfully reduced was

of the radius articulates with the capitellum at the radiohumeral joint. The radial head glides on the humerus in pronation and supination and in flexion and extension. The head of the radius also articulates with the ulna to form the radio-ulnar joint. This joint functions in pronation and supination. The stability of the elbow depends upon the shape of the bones and the strength of the ligaments.

The three joints at the elbow communicate, and slight displacement of fragments or overproduction of callus may cause serious defects in motion.

The carrying angle may vary from 0 to 20 degrees. Some apparently normal elbows show no carrying angle. In children who have relaxed joints the elbow often loses its angle when it goes into hyperextension.

Supracondylar or Dicondylar Fractures

These are the common fractures in childhood. When a child falls on his outstretched hand, the force is transmitted to the elbow through the radius and ulna. The fracture line runs through the olecranon fossa, which is the weakest part of the bone. The direction of the force displaces the distal fragment backward and toward the inner or outer side. The deformity is typical. With backward displacement there is pressure on the brachial artery from the sharp end of the proximal fragment. Later, hemorrhage or edema may increase this pressure, interfere with venous circulation, and may cause ischemic or Volkmann's paralysis.

If the radial pulse is weaker than the opposite one or if it is obliterated, no time should be lost in reducing the displacement.

Reduction is carried out under anesthesia by means of traction and manipulation. The distal fragment is carried forward and locked in position of flexion. Lateral or medial displacement must be corrected. If this displacement is not corrected, a change in carrying angle is apt to result. Perfect reduction in the lateral view while desired is not essential.

Bone blocks that are evident in x-ray disappear as the extremity grows. The child must be kept under close observation until the circulation is normal and the swelling disappears.

Fixation is carried out by means of a posterior molded plaster splint. This is worn for three to four weeks and is followed with a sling for another week. In difficult cases where reduction cannot be accomplished by manipulation or where the flexed position interferes with circulation, the method recommended by Dunlop¹ works well. This consists in traction in abduction with the patient in bed and the elbow at about 145 degrees. As overriding and displacement is overcome, the flexion of the elbow is gradually increased. After the bones are in apposition, traction may be removed, and immobilization is continued with plaster splint with the elbow at 90 degrees or less. This treatment requires hospitalization for approximately two weeks.

T or Y Fractures

These fractures resulting from a blow or a fall are the most serious fractures of the elbow occurring in adults. They are often a disappointment to both the patient and the physician. The fracture line is transverse above the condyles and also extends downward into the joint. The end of the proximal fragment is forced between the condyles, thus separating them. There is overriding and comminution. The ligaments are torn, and the periosteum is stripped from the proximal fragment. This is an excellent base for abundant callous production. On palpation the elbow feels like a bag of marbles. There is marked swelling.

To obtain reduction, length must be restored by traction. This may be accomplished by the method of Magnuson.² The patient is put to bed. The elbow is flexed at a right angle, and the forearm is suspended to an overhead frame which projects from the traction apparatus at the side of the bed. An adhesive plaster extension is placed in the forearm, and in this manner the arm is held in sus-

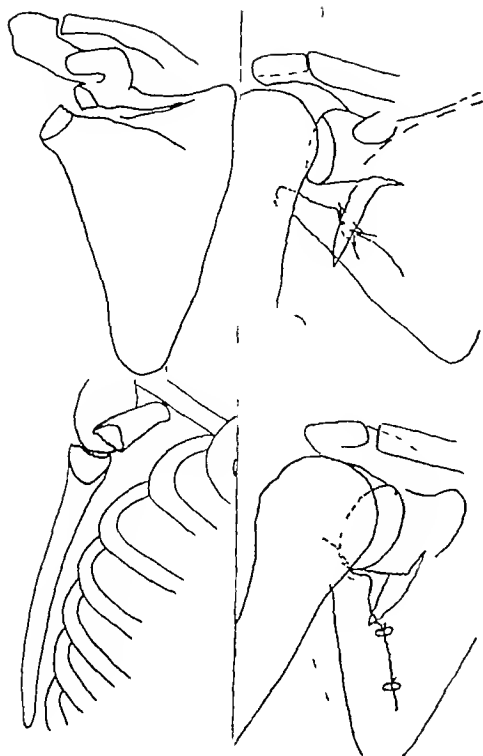


FIG 5

tient, but the economic end-result seriousness is not usually as great as the functional end-result loss. Furthermore, functional and economic loss following severe injuries to the shoulder is much less in relation to anatomic deformity than is the case following injuries involving

weight-bearing joints and most non weight-bearing joints. This is largely due to the fact that scapulohumeral ankylosis usually leaves the supplementary scapulothoracic motion undisturbed or even increased in range.

The method of treatment after reduction of fracture in persons up to 50 years of age was based entirely on degree of stability of fragments after reduction. Successful end results in the 20-to-50 year group were dependent more upon accurate reduction than upon early mobilization and practically not at all dependent upon the type of fixation selected. In the over-50-year group the seeming choice in method of aftertreatment represents a transition from immobilization to the minimum of fixation and almost immediate motion of the shoulder girdle. The objection to use of spica in the aged lies not in poor results obtained but in lack of necessity for such a cumbersome dressing.

Fracture-dislocation of the shoulder, while always a serious injury, is not always a major surgical problem. In this series none of the dislocations had clinical evidence of rupture of the supraspinatus tendon. Three of the 6 dislocations with fractured neck were reduced without open operation and without nerve injury or circulatory damage, and only once was internal fixation of an associated fractured tuberosity needed.

FRACTURES OF THE ELBOW

RICHARD S FARR, M D, Syracuse, New York

FRACTURES of the lower end of the humerus and the upper end of the radius and ulna are frequent in children. They are much less common in adults. In order to diagnose correctly fractures in this region, it is necessary to have knowledge of the x-ray appearances of

the bones at all stages of their development.

There are three joints in the elbow. The ulna locks snugly with the trochlea. The shape of the trochlear surfaces allows motion in flexion and extension but also limits the range of this motion. The head

Fracture Head of Radius

This fracture is due to a fall on the hand with the elbow in flexion or extension. The head of the radius is forced against the capitellum. The result ranges from a slight tilting of the articular surface to complete fracture with comminution and displacement. If the fragments are not displaced, immobilization is all that is necessary. In children the fracture may be impacted and the articular surface may be tilted. This requires no special treatment other than immobilization. In adults, if the head or fragments of it are displaced, excision is necessary. Occasionally, after the head of the radius is excised, there is extensive callous production. Callus may be so large that it blocks motion and sometimes causes complete ankylosis in the elbow. This callus should not be removed until it has the appearance of mature bone in the x-ray. Perhaps a vitalum cap over the end of the radius will be the solution to this troublesome problem.

The diagnosis of fractures about the elbow is made from x-ray films. Careful study of these films, including the opposite elbow for comparison if necessary, will determine the procedure in each case. No rules can be given as to the

length of time that splintage is necessary. It varies from three weeks in impacted fractures of the head of the radius to six weeks in T fractures. Plaster-of-paris splints are preferred. They are applied without padding or with thin padding and molded carefully over the bony prominences. Skeletal traction by means of wire through the olecranon or tongs in the condyles is always tried in T fractures before an operative procedure. In these fractures fair approximation and closed reduction is preferred to perfect apposition by means of open operation. Physical therapy by means of heat, massage, and active motion is instituted as soon as the arm can be removed from the splint.

The prognosis in fractures of the elbow should always be guarded. Slight displacement will sometimes cause great restriction of motion. In children retardation of growth may result from disturbance of circulation in the epiphysis. In adults some restriction may be expected from adhesions or callus or both.

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FRACTURES OF THE ANKLE

BENJAMIN E. OBLETZ, M D, Buffalo

THIS paper is based on a study of 140 patients with ankle fractures who have been hospitalized in the Buffalo General Hospital during the past ten years. For the most part these represent serious ankle fractures. It appears from this study that the simple linear fractures of one or both malleoli without displacement were seldom hospitalized. Such cases were handled as outpatients or private office cases of the various staff

physicians. For this reason this group of 140 cases does not represent a cross section of all ankle fractures. While the orthopedic staff members handled the majority of these fractures, 55 patients were treated by 23 different physicians.

These ankle fractures appeared more frequently in the fourth, fifth, and sixth decades and were about equally distributed among men and women. Two-

pension A piece of felt is then fitted around the forearm near the elbow This allows application of traction along the humerus through the ligaments of the elbow joint Enough traction is applied to pull the fragments down into position From 10 to 15 pounds is usually enough to bring fragments into alignment When length is obtained the fragments are pressed into approximation Weight is continued and reduced to a point where it is not uncomfortable This has been a much more satisfactory method of reduction in complicated fractures than any other closed method and is far more satisfactory than open operation Traction should be maintained for two to three weeks, and then the elbow is immobilized for a further two or three weeks with plaster splints or a circular cast

If this method is unsuccessful skeletal traction may be used by means of a Kirschner wire through the olecranon or tongs may be put in the condyles, and if perfectly placed they will not only permit traction but will also press the condyles together In the hands of the expert, excellent apposition of fragments is obtained

Reduction by open operation is sometimes necessary The exposure through a posterior incision as recommended by Van Gorder³ is apparently ideal The bones are approximated and fixed with vitalium plates and screws Exposure of the fragments requires elevation of the periosteum This may be followed by extensive callous production and resulting restriction of motion

Fracture of the Lateral Condyle

When force is transmitted from the hand up the forearm through the radius the lateral condyle receives the blow The fracture line extends from above the lateral condyle downward toward the center of the joint and includes the capitellum The frequency of this fracture is estimated at 15 per cent of fractures of the distal end of the humerus The fragment is displaced backward and is usually rotated

Wilson⁴ states that this rotation may

be 90 degrees or more, and the degree of rotation depends upon the width of the tear in the aponeurosis Rotation brings the articular surface of the fragment in apposition with the lower end of the humerus This, he believes, is the cause of nonunion Delayed ulnar palsy is a late complication of this injury This is due to a disturbance in growth with resulting valgus deformity The palsy develops many years after the fracture

Treatment—If there is little displacement, splinting in acute flexion is all that is necessary If the fragment is rotated, manipulation is usually unsuccessful and open operation must be carried out The fragment is exposed through a lateral incision and is turned or rotated back into position Fixation by means of a silk suture or a nail may be necessary Splintage in acute flexion is continued for four weeks and is followed by a sling The results are good

Fracture of the Medial Condyle

This fracture is not very common It causes a loss of the carrying angle The fracture line enters the joint of the ulnar trochlea, and the fragment is usually displaced upward If not reduced there is serious interference with the humero-ulnar joint motion It is reduced by traction and manipulation The better position for maintaining reduction is hyperflexion Open operation and fixation may be necessary The procedure is similar to the operation on the lateral condyle. At the same time the ulnar nerve should be transplanted to the front of the condyle

Fractures of the Olecranon

These fractures are due to a fall on the elbow or violent muscle pull by the triceps If fragments are in approximation, splinting in extension is required for three weeks, followed by one to two weeks in flexion When fragments are separated, open reduction and fixation with wire or heavy silk is necessary The elbow is fixed in flexion Active motion may be started in three weeks

oblique fracture of the fibula was seen 77 times, occurring in 50 per cent of the bimalleolar and 90 per cent of the trimalleolar fractures

2 The second type of fracture of the fibula is a transverse one at or below the level of the tibial plafond. The mechanism in this instance is that of adduction or inversion. It is sometimes referred to as an avulsion fracture of the external malleolus. This fibular fracture is primary, and, if the force is severe and continued, there occurs a secondary fracture of the tibial malleolus. This tibial malleolar fracture is usually of the compression type. In certain instances a generous portion of the tibia may be split off instead of a crushing of the tibial malleolus. This avulsion type of fracture of the fibula was seen in 8 cases in our series.

3 A third site of fracture of the fibula is one through the surgical neck at a point 2 or 3 inches above the tip of the malleolus. This fracture is a result of abduction or eversion and is usually secondary to a primary fracture of the tibial malleolus. The force of abduction puts tension on the internal lateral ligament, which may either rupture or break off the tibial malleolus. If either of these structures give way, there follows a diastasis of the ankle mortise and finally a fracture of the fibula through the surgical neck. It is a bending type of fracture of the fibula, rather than one caused by torsion. The fracture line is roughly horizontal. This type of fracture, involving a lateral displacement of the astragalus, is commonly known as the Pott's fracture. In our series of cases the bending type of fracture through the surgical neck of the fibula was seen 21 times.

4. A fourth site of fibular fracture is in the shaft just below the head. This is produced by torsion or by compression in its long axis. This fracture occurred in 5 instances in our series. We have seen this type of fracture in 1 case of severe trauma to the ankle without fracture but with diastasis of the ankle mortise.

The posterior lip of the tibial plafond

is quite prominent and extends downward for approximately 5 mm. It was named the posterior malleolus by Destot in 1911.

Its primary function is to reinforce the ankle mortise posteriorly. The most common fracture of the posterior malleolus is one that complicates the bimalleolar fracture caused by external rotation or abduction. If a component of backward thrust of the astragalus is added to the mechanism causing the bimalleolar fracture, the posterior malleolus is fractured off. Probably the usual mechanism is that the weight of the body in falling on the fixed foot forces the tibia downward and forward against the astragalus, causing a fracture of the posterior malleolus. Lateral roentgenograms of these trimalleolar fractures show that up to one-half of the articular surface of the tibia may be split off and displaced posteriorly.

The clinical significance of this is immediately apparent, because here the integrity of the weight-bearing surface of the tibia is jeopardized.

An isolated fracture of the posterior malleolus is considered a rare fracture. It was found in only 1 instance in our series. Though the mechanism of such a fracture was considered by Lucas-Championnière as a crushing force from below upward, our case demonstrates that torsion played some part, for there was an oblique fracture of the upper end of the fibula along with the isolated fracture of the posterior malleolus.

The anterior tubercle of the tibia is sometimes referred to as the anterior malleolus. It serves as the medial point of attachment of the inferior tibiofibular ligament. In diastasis of the tibia and fibula this anterior tubercle may be fractured. More often the bone remains intact while the ligaments rupture. We have seen this avulsion type of fracture in 2 instances, both in bimalleolar fractures of the abduction type.

The supramalleolar fracture occurs at a point 2 inches or less above the ankle joint. It is usually caused by direct violence. While this type of fracture

TABLE 1—CLASSIFICATION OF ANKLE FRACTURES

Unimalleolar			20
	External	10	
	Internal	18	
	Posterior	1	
Bimalleolar			39
Trimalleolar			57
Supramalleolar			4
Intermalleolar			3
Total			132

thirds of the patients were between the ages of 30 and 60

There is no method of classifying ankle fractures that is completely satisfactory. According to Ashhurst, whose study of 300 ankle fractures in 1922 is still the American classic on this subject, a "classification based on mechanism, imperfect though it be, is, nevertheless, more easily understood and remembered" than any other. His classification comprising five major groups and eighteen subgroups is a rather formidable one. In our experience with medical students and interns we have found that a classification based upon anatomic characteristics is more simple, more objective, and more easily remembered. The designation of ankle fractures by proper names, such as Pott's, Dupuytren's, Cotton's, etc., is unnecessarily confusing. There is today no unanimity of opinion as to just what is meant by a Pott's fracture. To quote Ashhurst "Pott in 1769 described a fracture which does not exist, and Dupuytren in 1819 commended him for his acute observation and fidelity to nature."

The classification that we used in this study (Table 1) is based on the one presented by Henderson in 1932 when he introduced the term "trimalleolar fracture" to denote a fracture of the posterior margin or malleolus of the tibia, associated with fractures of the fibular and tibial malleoli.

It is to be remembered that Table 1 does not give a true indication of the relative incidence of the various types of fractures listed. This series does not represent consecutive ankle fractures.

Fractures of the ankle are nearly always caused by indirect violence, and it is for this reason that the mechanism of injury

is important. For an understanding of the mechanics of ankle fractures, we must study the nature of the fibular fracture. Dupuytren, long before the days of roentgenograms, recognized fractures of the fibula as the pivotal injury in ankle fractures.

In severe ankle injuries the fibula may be fractured in any one of four locations, depending on the mechanism of injury and the degree of force sustained. The fibular fracture may be primary or secondary, complete or incomplete.

1. The most common type of fracture of the fibula is the "mixed oblique" fracture. By this is meant that the oblique fracture line runs above and below the inferior tibiofibular junction. The line of fracture, which may be linear or comminuted, is always higher on the posterior edge of the fibula than on the anterior. It is often seen only in the lateral view roentgenogram. There may be little or no displacement, or there may be considerable separation of fragments.

This is a primary fracture and is caused by forced external rotation of the astragalus in the ankle mortise. If the force is continued, this fracture may be followed by a rupture of the internal lateral ligament or by an avulsion of the internal malleolus, in which event a bimalleolar fracture is produced. If an element of backward thrust of the foot is added to the force of external rotation, the posterior malleolus may be fractured and the trimalleolar fracture results.

The mixed oblique fracture of the fibula may occur with or without displacement of the astragalus in the ankle mortise. If displacement occurs, it is always found that the fibular malleolus and astragalus move as a single unit. The posterior band of the external lateral ligament is an exceedingly strong bond between the fibula and the astragalus. Rupture of this ligament has not been reported.

The mechanism of external rotation has been demonstrated experimentally on cadavers by Maisonneuve, Honigschmied, and Ashhurst and has been recorded by Ashhurst as occurring in 61 per cent of his 300 cases. In our series the mixed

portion of the weight-bearing surface of the tibia has been fractured. The total period of immobilization in trimalleolar fractures is from eight weeks to ten weeks.

Mobilization of the foot and ankle by physical therapy is started upon removal of the cast. Baking and massage, followed by active motion and cautious weight bearing with crutches, are continued until the patient is ambulatory without swelling or pain. Elastic bandages and arch supports are used when indicated.

In the 5 cases in which reduction could not be obtained by closed methods, skeletal traction was used twice. In one a satisfactory reduction was maintained, while in the other, reduction could not be accomplished. A poor result was expected but the patient could not be traced. In 3 cases of trimalleolar fracture, open reduction with screw fixation of the large posterior malleolus was successfully employed.

Malunion is the most serious complication of ankle fractures. It may follow when bimalleolar and trimalleolar fractures are improperly reduced, or it may occur when properly reduced fractures are not adequately immobilized. In some instances the period of immobilization is too short, and unprotected weight bearing is resumed before the fracture is completely united. Malunion is evidenced clinically by pain, stiffness, and deformity in the ankle. The x-ray studies reveal the poor alignment of the ankle joint and may show evidences of traumatic arthritis. Treatment may be conservative or surgical. In a large series of cases of malunited fractures of the ankle reported by Hamsa in 1939, conservative and palliative measures, such as physical therapy, arch supports, and braces, were only fairly adequate. The operative procedure that gave the highest percentage of good results was the arthrodesis of the ankle.

In our series only 3 malunited fractures of the ankle were found. Physical therapy and arch supports were tried for as long as two years without improvement.

In all 3 cases the ankles were fused surgically, with good results as estimated by painless walking.

Nonunion of the internal malleolus was encountered in 2 cases of bimalleolar and 1 case of trimalleolar fractures. Open reduction with fixation of the malleolus fragment by a screw was performed in each instance. The results were satisfactory in relieving pain and instability in the ankle.

Fractures of the Astragalus

Only 8 fractures of the astragalus were hospitalized during the past ten years. The usual history of a fall from a height was obtained from 7 patients. In 4 of these there were associated fractures of the os calcis. Two of the cases had linear fractures through the neck of the astragalus without much displacement, while others had varying degrees of comminution with spreading fragments of the body of the astragalus. These cases were treated conservatively by closed methods and plaster-of-paris cast immobilization. All were walking without crutches after four to five months. Late end results could not be obtained.

In one boy who sustained a compound comminuted fracture of the astragalus when his foot was caught under the wheel of a train, partial astragalectomy was performed. Because of a great amount of disability and several persistent draining sinuses, the leg was later amputated at its lower third.

Summary

A study was made of 140 persons with fractures about the ankle who were hospitalized during the past decade in the Buffalo General Hospital. Of these, 8 were fractures of the astragalus. The fractures of the tibia and fibula were classified anatomically, using the classification suggested by Henderson. A large number of our cases were of the trimalleolar variety. In discussing the mechanism of production of ankle fractures, the nature of the fibular fracture was used as a guide. The most common mechanism of production, seen in 58 per

does not violate the integrity of the ankle joint, it is important to restore and maintain a true weight-bearing line of the tibia to prevent gradual distortion of the ankle joint. Only 4 such fractures were observed.

The intermalleolar fracture is usually a comminuted T or Y fracture of the lower tibia. It may be associated with fractures of the malleoli. It is a fracture caused by compression in the long axis of the leg and usually is a result of falling from a height and landing on the feet. It was seen in only 3 cases, and its relative infrequency can be explained by the fact that compressions in the long axis of the leg usually result in fractures of the os calcis or astragalus rather than in fractures of the tibia. The comminution of the tibia may be extreme, making satisfactory reposition of the fragments impossible. Traumatic arthritis of the ankle joint is a frequent sequel to this type of fracture.

Treatment

For purposes of treatment we may divide all ankle fractures into two groups: those without displacement and those with displacement of the fractures or the astragalus.

Fractures Without Displacement

Complete fractures of isolated malleoli may be immobilized in short leg casts. Bimalleolar fractures in which one malleolus fracture is incomplete may also be immobilized in the short leg cast. Trimalleolar fractures without displacement should be immobilized in long leg casts. If there is much swelling of the ankle, the first cast may be changed after one week. During the past few years we have employed a snug-fitting plaster-of-paris cast with a walking iron. By this form of immobilization we believe that the fractured ankle is adequately protected during the healing period. Weight bearing has proved to be of value in keeping the swelling and circulatory stasis to a minimum. In several instances the amount of swelling was so negligible that a normal shoe could be worn immediately upon

removal of the cast. The end results of fractures of the ankle without displacement are invariably good.

Fractures with Displacement

Most of our fractures were of the bimalleolar and trimalleolar types with displacement of fragments and dislocation of the astragalus. Here we have followed the cardinal principle of restoring the ankle mortise to anatomic perfection. Where this was neglected or could not be done, poor results were obtained. In general the end results of ankle fractures are in direct relationship to the anatomic reposition of the ankle joint. Here, anatomy and function go hand in hand. Good results invariably follow correct anatomic reductions, while poor results can be predicted in those instances where they are not achieved.

For this group of fractures, closed reduction under general anesthesia was the method of choice. It was successfully carried out in all but 5 of our cases. In its simplest form the method of reduction consists of manipulation of the ankle by the surgeon while the knee is being held in flexion on the fracture table or by an assistant. The manipulative reduction is expedited when the mechanism of production of the fracture is understood and the lines of force retraced in reverse. With the fracture reduced and the foot held in dorsiflexion, it has been our custom to have check roentgenograms taken by a portable x-ray. If the x-rays show the reduction to be satisfactory, a plaster-of-paris cast is applied from the toes to the mid thigh. X-rays are again taken after the cast is applied. In 4 instances the reductions were repeated when they were found to be unsatisfactory. In 1 case three separate manipulations were required before a satisfactory reduction could be obtained.

After four weeks of immobilization the long leg cast is removed, and a snug-fitting short leg cast is applied. Where desired, a walking iron is incorporated into this cast and weight bearing is started. Weight bearing is usually delayed in those instances where a large

Another general consideration is the type of motion to be instituted when the fracture is considered sufficiently healed to allow movement in the contiguous joint. May I strongly emphasize that the only safe motion in anyone's hands except the surgeon is active motion. The patient in being instructed to use active motion must also be instructed that any pain must be avoided because it is nature's signal of an excess strain or irritation. Finally, a general consideration is that the motion of all joints of the extremity must be maintained or re-established at the earliest possible time, together with the maintenance or redevelopment of the entire muscle power of the extremity. One of the causes of nonunion is now said to be a separation of the fragments due to excessive traction or a fixation of the bone, so that when atrophy occurs at the ends of the bone, the muscle pull cannot approximate the ends of the fragments. This should be rigidly avoided.

All of these considerations may seem to you to be self-indicated. It has been our experience, however, that many such general considerations are forgotten and that a disability may result from the neglect of adequate attention to these details and general principles.

I should now like to consider the special joints. I wish to commend the writers strongly for advocating the reduction by manipulation of the transverse supracondylar fractures of the humerus or femur, and may I add that in effecting this reduction it may be necessary to angulate the fragments as much as 90 degrees to accomplish an end-to-end apposition. A flexion of the knee to 90 degrees is as helpful in reducing fracture of the lower femur as flexing the elbow to 90 degrees of the upper extremity. It not only relaxes the muscles but serves as a more efficient handle.

When skeletal traction for fractures of the lower end of the femur is used, skeletal traction through the condyles of the femur is usually possible without entering the knee joint.

In the intercondylar fracture of the femur it is sometimes possible to reposition the condyles and then fix them with a Carrel screw, thus converting the fracture into a less difficult supracondylar type. If such a method of reduction is elected, it should be performed in an operating room with the extremity sterile and rigid asepsis maintained. A fixation of the supracondylar fracture can then sometimes be accomplished by inserting a Kirschner wire just below the adductor tubercle and directing it upward into the shaft of the femur. The wire may be inserted in a similar way on the lateral side. Some surgeons seem to be using a large amount of metal for fixation. Metal fixation should not be con-

demned for this reason but all men should use the least amount of metal possible. Until a standard for fixation in each type of fracture can be determined, there is bound to be a variability in the amount of fixation utilized.

In reviewing all of the fractures into the knee that have occurred at both private and ward practice at the Syracuse University Hospital, I was surprised to find several intracapsular fractures. These consisted of a sheered-off section or arc of the femoral condyle, in no instance was the reduction maintained except by internal fixation.

Fractures of the Tibial Plateau—Nothing has been said in Dr. Wentworth's paper as to when a depression fracture is depressed sufficiently to require reduction. I was astounded in reviewing these cases to find that the depression frequently remained unaltered. Although I have not yet followed up all of these cases to determine the resultant function in this group, I have had enough experience in seeing such cases to know that disturbed function frequently occurs. Is it safe to say that a knee joint will tighten up? I doubt it. Joint instability with disturbed line of weight bearing is in direct proportion to the amount of depression. This type of fracture is frequently complicated by an irreparable injury to the interarticular structures of the knee joint or of the intercondylar spines. In reviewing these cases I did not find a single instance where depression was lessened appreciably by use of a clamp reduction. The widening was reduced in many instances. We have tried using the clamp with the knee joint open and have found that there was no improvement in the depression, as visualized by direct view in the joint. Although it has not been my practice to perform an open operation on all of these cases, I am convinced that poor results occur too frequently, at least in badly comminuted types, and that if proper facilities and ability are available an open operation offers the best opportunity for adequate reduction. A simple plaster fixation is all that is necessary.

Elbows—In the supracondylar fracture of the humerus a marked internal rotation of the lower fragment is usually present as the result of the fixation of the forearm to the body for splinting before the patient reaches the physician. While the fracture is being reduced, a complete internal rotation is necessary and is too often not performed.

In the intercondylar fracture of the humerus open operation is certainly to be avoided whenever possible, as removal of the periosteum stimulates excessive callous formation. A transfixation of a reduced fracture may be accom-

cent of our cases, was that of forced external rotation of the foot. The principles of treatment were briefly discussed.

Successful results may be expected if complete and accurate reduction of the fractures is maintained uninterruptedly until union is firm. Protected weight bearing is of value in preventing disuse atrophy. In our series of cases all but 5 of the ankle fractures were satisfactorily reduced by closed manipulation under anesthesia.

Discussion of Symposium on Fractures Involving Joints

Dr R. D. Severance, *Syracuse, New York*—I have been greatly interested in this symposium of "Fractures Involving Joints," and should like to commend each writer for the thoroughness and clarity of his paper. I am especially impressed with the value of the experiences expressed in these articles.

In a discussion of fractures into the joints there are certain general considerations upon which I should like to comment. A fracture into a joint always necessitates hemorrhage into the joint cavity. We know that a hemorrhage causes an acute synovitis by irritation. Too often even in the absence of a fracture a synovitis is reluctant to recover. This condition should always be borne in mind, and the removal of the blood if it distends the capsule is a necessity and may be advisable even if it is not that extensive.

A second complication is a disturbance of continuity of the articular cartilage. We know that an irregularity of the articular cartilage will result in an atrophy at high spots which, if sufficiently high, may present raw bone as an articulating surface. This in turn may result in a traumatic arthritis that is disabling even if temporary but which is most disabling if it persists. Prevention of such a condition necessitates an anatomic reposition of the fragments as a desired objective.

There are certain demands relative to whether the joint is a weight-bearing one or not. We must expect irritation to be more probable in a weight-bearing joint than in a joint of the upper extremity. This forces us to obtain a greater exactness of smoothness in the weight-bearing joint than in joints of the upper extremity. There are also certain demands as to whether the patient is a man or woman. In general we may anticipate that a man will have to use his lower ex-

trémities without opportunity for rest, shielding, or protection as compared to a woman. This, of course, is variable, as some women must remain on their feet as much or more than men. A complete range of motion is probably more desirable in a woman than in a man, as women are more prone to be embarrassed by the awkward appearance of a restriction of motion. In other words, men may be satisfied with a limitation of motion regardless of appearance of awkwardness if the motion is satisfactory for his job and is painless. We must not, however, lose sight of the fact that function is the essential factor to be obtained.

I should like to make a comment with regard to the reduction of fractures in relation to joints. If the use of traction is elected as the method of reduction, that traction should be made certain—in other words, skeletal except in the presence of active epiphyses in childhood. Traction except by a skeletal method may seem plausible in an individual instance, but too frequently it becomes variable and inefficient through some unexpected slipping of adhesive, a traction band, or other means of grasping the extremity. The reduction is too important to consider the adoption of any unnecessary method which may be uncertain. I should also like to emphasize here that the reduction should be carefully planned by a study of the x-rays and a careful consideration of anatomy, with a review of that anatomy if necessary. We may well avoid repetition of at tempted reductions by a careful planning of our reduction procedure. This frequently necessitates an x-ray of the opposite normal joint made in identical positions for comparison.

The fixation after reduction is equally important. Here again, certain general considerations are worthy of comment. A method should be chosen that permits the maintenance of joint motion or allows the earliest possible motion. This naturally leads the physician frequently to choose some form of metal fixation. Every physician with an extensive experience with fractures over a period of fifteen years or more is thoroughly familiar with the frequently unfortunate result of metal fixation. Someone has aptly said that we are still taking out the hardware inserted during the last World War. Since the introduction of vitallium, fixation by metal becomes a safe method in many instances. It is so strong comparatively that the danger of bending and breaking has been essentially overcome. Its chief advantage, however, is that it is not irritating. If metal fixation is to be used the surgeon should discard all old metal not of this type and character and replace it with the present strong nonirritating type.

fracture becomes of secondary importance, and accurate reduction cannot be depended upon to avoid ischemic changes. A useless forearm and hand is a much greater calamity than a slight deformity of the elbow with some limitation of motion.

Very few fractures into joints require operation, but certain ones about the elbow do. The badly displaced supracondylar or badly comminuted fractures often result in excellent function even though the roentgenograms do not look too promising. They are almost always best treated conservatively. A fracture of the external condyle, however, can rarely be reduced by closed manipulation, as the fragment has usually been rotated by the extensor muscles of the wrist which are attached to it. In the roentgenograms this rotation can easily be overlooked, as the bone fragment is roughly triangular in shape. Unless this fragment is accurately replaced by open reduction, growth will be disturbed and a cubitus valgus will result. This may cause ulnar nerve symptoms many years later.

Dislocation of the elbow with avulsion of the

internal epicondyle is not uncommon. After the dislocation has been reduced, the fact that the epicondyle has been torn off and caught in the joint may escape notice, as the small internal epicondyle breaks off through the old epiphyseal line and leaves a smooth surface on the inner side of the trochlea. If this fragment, the medial ligament attached to it, and the ulnar nerve carried with it are left in the elbow, there is bound to be considerable disability, and there may be serious damage to the ulnar nerve. Manipulation may be attempted if the patient is seen soon after the injury, but open reduction is very simple and yields excellent results.

I agree heartily with Dr. Farr that the results of fractures of the head of the radius leave much to be desired, whether the head of the bone is removed soon after the injury, some time later, or not at all.

I know of no way to prevent excessive callous formation and capsular thickening about the elbow after an injury, but misguided attempts to increase motion by passive stretching or manipulation are sure ways to stimulate this undesirable process.

CRANIAL SURGERY AT THE BATTLE FRONT

When the last war began we were quite unprepared for a military effort on such a gigantic scale. Writes the London correspondent of the *J.A.M.A.*: "Now the danger has been foreseen and arrangements have been made in advance in the light of our experience of the last war. As previous letters have shown, this is true of the medical corps. The latest advance announced is a mobile unit for cranial surgery to operate as near the battle front as possible. Since the last war there have been many advances in technique, largely in the use of electrical apparatus, x-rays, diathermy, and so on, which will be made available. For cranial surgery the Royal Army Medical Corps has constructed a mobile neurosurgical unit which is self-contained. The vehicle is a motor lorry which carries a separate engine and dynamo. The cable conveys the current to the operating room, where it is dis-

tributed to lighting, surgical diathermy, operation table heaters, and suction pump. The current also charges a 12-volt accumulator for the electromagnet. The equipment includes two sets of instruments, two folding operating tables with special folding head rests, two folding instrument tables, and modern anesthetic apparatus. Sterilization of water and instruments is done by oil stoves, and there is also a high pressure sterilizer for instruments and dressings.

The personnel traveling in the lorry includes a neurosurgeon, a neurologist, an anesthetist, two surgical assistants, and two operating room nurses. The unit is designed to operate chiefly at casualty clearing stations but will be based on a parent base hospital for its reserve supplies. It carries sufficient material for several hundred neurosurgical operations and can thus remain in the forward area for weeks at a time.

MEDICATED CLASSIC #5

(Based on Joyce Kilmer's "Trees")

I think that I shall never see
A plan that cares for each M & D
A plan of faith and decency
And individuality—
A plan that's free from politics
And subtle socialistic tricks

I think that I shall never see
The day when crackpots let me be,
When hair-brained schemes are tossed
aside,
When private rights are not denied.
While poems are made by fools like me,
We're fooled by Washington, D. C.
—James A. Brussel in *J.A.M.A.*

AN OREGON SEQUENCE

A Double Feature at a Portland, Oregon theater where A. C. J. saw the announcement

Sunday—Monday—Tuesday

Ginger Rogers, David Niven in
'BACHELOR MOTHER'

Lloyd Nolan, Janice Logan in
'UNDER COVER DOCTOR'

Cartoon

News

Spencer Tracy—Hedy Lamarr in
'I TAKE THIS WOMAN'

—plus—

'A CHILD IS BORN'

—J.A.M.A.

plished by inserting a Kirschner wire in a longitudinal direction from the external epicondyle upward into the shaft of the humerus as was suggested for the femur.

Ankle Fractures—This presentation is most commendable. The anatomic classification is rapidly becoming universally adopted. The universal knowledge of anatomy as compared to the less well-known and controversial theories of mechanism of fracture explains this trend. The growing use of early weight bearing in treatment of simple fractures without displacement may be responsible for a definite mortality. Emboli have occurred in simple fibular fractures too frequently at times for the complacency of the surgeon. A great danger still exists in overlooking a fracture of the so-called posterior malleolus. X-ray interpretations by incompetent or inexperienced physicians have at times been responsible. Remember, the law, interpreted and sustained by higher courts, is that a physician presuming to treat a fracture assumes the ability and responsibility to interpret the x-ray films.

In closing I again commend the clarity and brevity of these papers and above all a discussion of all cases by anatomic description rather than affixing rapidly forgotten and confused proper names to special fractures.

Dr. T. Campbell Thompson, *New York City*—The papers that have been given by Drs. Allaben, Wentworth, Farr, and Oblatz have been most instructive and show conclusively that fractures involving joints are different from other fractures, just as fractures in children are different from fractures in adults or fractures of the lower extremity are different from those of the upper extremity. The types of fractures involving joints are myriad, and each one presents an individual problem.

Restoration of full function in the joint is the primary aim toward which one should strive. To re-establish anatomical perfection is ideal but is often unattainable. If this is the case, every effort should be devoted to the recovery of approximately normal function. Nature often aids us greatly, but we cannot leave too much to nature.

In the lower extremity proper alignment of the long bones and good lateral stability of the knee and ankle are essential. Dr. Oblatz's grouping of fractures of the ankle, depending on the type of fracture occurring in the fibula, is an excellent practical means of determining the mechanism of injury and the manipulation required for reduction. Dr. Allaben has also classified the fractures about the knee joint into

groups requiring different methods of treatment.

In the upper extremity the problem is somewhat different, as a free range of motion is more important than perfect alignment. Dr. Wentworth has brought out the point that limitation of motion in the shoulder in elderly people is usually caused by prolonged and unnecessary immobilization and is rarely the result of malunion. Gravity tends to correct all except the grossly displaced fractures in this region and is usually sufficient without any manipulation whatsoever. In order to relieve pain and spasm and maintain all possible motion in the shoulder, elbow, and hand, we have adopted the following regimen. Immediately after the diagnosis has been made by a roentgenogram taken with the patient standing, the principle of the use of gravity is carefully explained to him. After a little gentle effleurage, pendulum exercises are carried out. The patient is not allowed to lie down at all and even sleeps propped up in bed for several weeks. He is up and about during the day with only a sling or a sling and swathe for immobilization. The pendulum exercises are repeated once or twice daily under supervision until he can be trusted to do them himself. I should like to ask Dr. Wentworth if he thinks that this routine is helpful or does it merely assure the patient that he is receiving adequate care? I agree with him that fixation of the shoulder in the abducted position is almost never indicated.

I have seen 3 instances in the past two years where dislocation of the shoulder has been accompanied by rupture of the supraspinatus tendon. The diagnosis is not usually made until it is noticed that the patient does not recover the power of initiating active abduction. Perhaps it is fortunate that, in dislocation of the shoulder, fracture of the greater tuberosity is a more common complication than rupture of the supraspinatus, as the results of late repair of this muscle are not too satisfactory.

Supracondylar fractures are very common in children, and the results are usually quite good even though perfect anatomical reposition is not accomplished. Volkmann's contracture is a rare complication, but this possibility must always be kept in mind. In any injury to any extremity the function of the parts distal to the injury should be determined, and if normal function is present it must be preserved. Early sensory and circulatory changes cannot be overlooked. If present, they must be promptly relieved by an operation that sections the forearm fascia, releasing the brachial vessels and the median and ulnar nerves from pressure. The

TABLE 1—SUMMARY OF RESULTS WITH BELLABULGARA AND RABELLON

Treatment	Previous Condition	Number of Cases	Un-improved	Slightly Improved	Moderately Improved	Greatly Improved
Bellabulgara	Very severe	23	3	5	8	7
Rabellon	Very severe	21	10	5	3	3

attention must be called to the fact that all of these 23 patients were in a very advanced stage of the disease. Except for the 3 in whom there was no improvement, all showed subjective improvement in that they felt stronger, slept better, had less feeling of tension and were more cheerful and cooperative. Objectively, there was an improved facial expression, less spasticity and tremor, greater facility in motion, and improvement in speech. Increased salivation was entirely relieved in practically all cases. In this series there were 5 patients with oculogyric crises. In 1 instance the crises disappeared, in 3 they were greatly reduced both in number and severity, and in 1 there was a slight degree of improvement. Of 9 patients unable to walk, 8 became able to walk without assistance. Two patients were treated earlier by Dr. Maybardiuk. Both of these patients had been bedridden and, following the use of Bellabulgara, were able to walk unassisted. One of these patients continued to improve even after the medicine was discontinued.

In the series of patients treated with Rabellon, the improvement was in general similar in nature but not so marked. There were 5 patients with oculogyric crises of whom 1 was greatly improved, 1 moderately improved, and 3 unimproved. Of 9 patients unable to walk, 3 became able to walk unassisted.

It is interesting to note that when the comparative study of these two preparations was ended and the patients were returned to the previous medication, almost all of the patients treated with Bellabulgara urgently requested that the Bellabulgara be continued. On the other hand, the patients who had received Rabellon, for the most part, accepted the return without comment.

With both Bellabulgara and Rabellon, the optimum dose varies with each patient. This must be reached by gradually

increasing the dose until side effects, such as marked dryness of the throat, blurring of vision, or both, appear. At this point the dose should be maintained for several days until there is some improvement in these symptoms, after which the dose should again be gradually increased. If really toxic symptoms, such as nausea, vomiting, diarrhea, urinary disturbances, headache, or dizziness, occur, the dose should be decreased immediately to the amount the patient was taking before these symptoms were noted. After maintaining this reduced dose for a time, an attempt should again be made to increase the dose gradually. The patient must be kept under careful observation until the optimum dose is attained. In most cases it is advantageous to give the medication in divided doses.

In view of the results obtained, both in the patients under the care of the Matheson Commission and in those studied at Welfare Hospital, we feel justified in concluding that Bellabulgara is the most beneficial drug at our disposal in the treatment of chronic encephalitis.

Discussion

Dr. Hermann Vollmer, *New York City*—Over a period of two years I carried out comparative studies with twelve different preparations. I know, therefore, how difficult it is to come to any conclusion as to the value of a certain preparation. The psychologic factor in such a study plays a decided role. All these patients had previously been treated with a great number of more or less ineffective drugs. Once materially improved by a new medicine, they are opposed to every change. I started my patients with "Homburg 680," a very effective concentrated extract from the original Bulgarian roots of Raef. When I tried to change to Rabellon tablets, the patients either refused the change or after trial found Rabellon not as good. I had to outwit my patients. The alkaloid compound present in Rabellon was prepared in solution of the same color and taste and dispensed in the same bottle as "Homburg 680." Now the patients found Rabellon as good or better than

A COMPARISON OF BELLABULGARA AND OTHER FORMS OF MEDICATION IN THE TREATMENT OF CHRONIC ENCEPHALITIS

JOSEPHINE B NEAL, M D , and STANLEY M DILLENBERG, M D , New York City

(Executive Secretary, The William J Matheson Commission for Encephalitis Research, New York City and Attending Neurologist, Welfare Hospital, New York City, respectively)

BELLABULGARA" is a tablet containing 4 decimilligrams of the total alkaloids extracted by white wine from the selected roots of Bulgarian belladonna. Preparations of this root, usually in the form of a white wine decoction, have been used for several years in Europe, particularly in Italy, in treating patients with chronic encephalitis.

A little more than two years ago the Matheson Commission, through the cooperation of the Lederle Laboratories, started to use a white wine decoction. Later it was found that this decoction deteriorated on standing, and a tablet was prepared to insure a stable preparation. The Matheson Commission has treated approximately 100 patients with these preparations and also with the tablets now known as Bellabulgara. Practically all of these patients had previously tried other forms of symptomatic treatment, such as hyoscine, stramonium, benzedrine, or combinations of these medications. The results with the Bulgarian belladonna were far superior to those obtained with any other form of symptomatic treatment. In all of the patients the disease was of long standing and in most instances in an advanced stage. As the result of treatment, about one-third can be considered greatly improved, one-half as moderately improved, and the remainder as slightly improved. Many of these patients have been under treatment for at least a year and a half, and the improvement has been maintained. In certain cases the improvement is increasing.

In the fall of 1939 it was possible to make a comparative study at Welfare

Hospital between a group of 23 patients treated with Bellabulgara and 21 treated with "Rabellon". Rabellon is a synthetic preparation distributed by Sharp and Dohme containing about 0.5 mg of alkaloids in the following combination: hyoscyamine 0.45 mg, atropine 0.037 mg, and scopolamine 0.012 mg. All of these patients were in a far-advanced stage of chronic encephalitis, some of them being confined to bed or to a wheel chair. All of them had previously received various forms of medication as in the series already described. The patients were placed in the two groups so that the degree of severity was as nearly equal as possible. The average age in each series was 42, and the average duration of the chronic stage was eleven and one-half years in the Bellabulgara series and eleven and two-tenths years in the Rabellon series. Table 1 shows the comparative results of the Rabellon and the Bellabulgara at the end of about two and one-half months of treatment.

It will be noted that the results with Bellabulgara were far superior to those with Rabellon. Indeed, 4 of the patients treated with Bellabulgara were so greatly improved that they were in a condition for discharge. This degree of improvement was not reached in any of the group of patients treated with Rabellon. Furthermore, the toxic effects with Rabellon were more frequent, more severe, and occurred with a smaller dosage. One patient had to stop the treatment on account of hematuria when an effective dose was reached.

The improvement following the use of Bellabulgara will be discussed again

Read at the Annual Meeting of the Medical Society of the State of New York, New York City, May 7, 1940

BACILLARY DYSENTERY DUE TO *BACILLUS ALKALESCENS*

JOSEPH FELSEN, M D , and WILLIAM WOLARSKY, M D , New York City

(From the Department of Laboratories and Research, the Bronx Hospital)

CONSIDERABLE doubt exists regarding the pathogenicity of *Bacillus alkalescens* as a cause of dysentery in man. The purpose of this communication is to present a correlated clinical and bacteriologic study of 14 cases.

Andrewes¹ first described the organism in 1918 when he isolated it from the human intestinal contents, but he regarded it as of doubtful pathogenicity. The subsequent history has closely paralleled that of *B. dysenteriae* Sonne-Duval. This organism was first described by Duval and Shorrrer² in 1904, but it was not considered seriously as a cause of bacillary dysentery until Sonne's work³ in 1915. Since then undoubted evidence of its pathogenicity has been presented. Similarly, following a quiescence of ten years during which no clinical reports appeared, evidence now appears to be slowly accumulating that *B. alkalescens* is definitely pathogenic.

Most of the papers published from 1928 to the present concern urinary tract infections with this organism. Arranged chronologically, these reports are by Smith and Fraser⁴ (1928), Weil⁵ (1929), Popoff and Spanwick⁶ (1931), Bamforth,⁷ Mackenzie and Ratner,⁸ Murray and Pike,⁹ Starkey¹⁰ (1934), Snyder and Hanner¹¹ (1937), Neter and Rappole,¹² Wooley and Sweet,¹³ and Neter¹⁴ (1938). Reports of intestinal infections associated with *B. alkalescens* are more sparse but appear to be increasing in frequency in recent years. In 1928 Smith and Fraser¹⁵ reported a case of puerperal fever in a woman with diarrhea. A positive blood culture for *B. alkalescens* was obtained, and the authors regarded the infection to be of intestinal origin. In 1934 Welch and Mickle¹⁶ described two outbreaks of bacillary dysentery due to *B. alkalescens* among students and nurses. These were traced to a food handler and promptly

ceased when the food handler was removed. They felt that the organism should be included in the *Shigella* group and was capable of producing disease in man. Mackenzie and Ratner¹⁷ reported a case of pyelonephritis in a woman, aged 31, with positive blood, urine, and fecal cultures for *B. alkalescens*. Starkey¹⁸ described a similar case of pyelitis with positive blood and urine cultures in a woman, aged 31, with disappearance of symptoms following elimination of the organism. He felt that while the presence of the organism in the intestine may not of itself give rise to symptoms it was a potential source of generalized infection.

In 1936 Brown and Anderson¹⁹ reported positive *B. alkalescens* cultures in three outbreaks of enteric disease and in a case of chronic enteritis. They obtained 28.6 per cent of positive cultures from 28 cases of enteric disease as against 1.4 per cent from a control group of 129. They regarded the organism as more often associated with disease than with health. In 1937 Snyder and Hanner²⁰ reported the case of a 7-year-old girl with a history of previous gastrointestinal disturbance associated with diarrhea at the age of 5. Positive cultures for *B. alkalescens* were obtained from the urine and feces. The same organism was also recovered from the brother's stool. In 1938 Wooley and Sweet²¹ described 5 cases of enteric infection in children, characterized by abdominal pain and diarrhea due to *B. alkalescens*. They were of the opinion that the organism was pathogenic at times, due to increased virulence.

In 1939 de Roda,²² studying the subject of ileocolitis and diarrhea among 607 children in the Philippines, obtained 13.8 per cent of positive cultures for *B. alkalescens*. Incidentally, the Sonne-Duval organism was recovered in 1.8 per cent

Homburg 680 A year later, when I had improved a great number of patients with Rabellon tablets and, for comparison, wanted to change to Homburg 680 or Bellabulgara, I had a similar experience. Most of my patients found these preparations not as good as Rabellon. A proper comparative study should be conducted with two groups of patients. The one to be treated with Bellabulgara until the optimum effect has been reached and then changed to Rabellon, the other group just the reverse. I am convinced that Dr. Neal then will come to the same conclusion that I came to, namely, that Rabellon is not less effective than Bellabulgara. Rabellon has the advantages of unlimited stability, uniformity, and much lower cost.

There is another, pharmacologic point which I should like to mention. As you know, the Atropa alkaloids occur in three optically different forms as racemic atropine and as levorotatory and dextrorotatory hyoscyamine. In nature, these alkaloids occur mostly in the form of levorotatory hyoscyamine—not as atropine. Hyoscyamine is more active in its paralyzing effect on nerve endings but less toxic than atropine, it has a less exciting effect on the central nervous system, not as easily causing delirium and hallucinations as atropine does. This is exactly what we need for the treatment of parkinsonians, and the high content of hyoscyamine seems to be the main advantage of the so-called Bulgarian treatment.

Hyoscyamine is a very delicate substance. To boil it in wine is regarded by pharmacologists as injurious to this alkaloid. The boiling process transforms much of the hyoscyamine into the less effective atropine. And Bellabulgara is—as far as I know—made from wine decoction of the roots. To believe, as Dr. Robev does, that the use of original Bulgarian wine is essential for this procedure seems to me rather mystic. Panegrossi and his pharmacologist Antolini-Frugoni have, years ago, abandoned the boiling procedure in favor of a cold extraction with alcohol and tartaric acid. They stated that this cold extraction which is also used for the preparation of Homburg 680 definitely brings about better results.

This seems to be another advantage of Rabellon—that it really contains 90 per cent hyoscyamine and that one knows exactly what it does contain.

Dr. J. L. McCartney, Philadelphia—Dr. Neal is to be highly complimented on the pioneer

work that she has done in the treatment of chronic encephalitis, and it is to be hoped that scientific understanding will not be befogged by commercial conflict. Obviously, the medical profession has been given very valuable assistance in both Rabellon and Bellabulgara, and the essential point is availability to these very unfortunate individuals who up until now have had little or no hope of relief from their most distressing symptoms.

Rabellon, like Bellabulgara, is an outcome of the earlier work done with the extract of Bulgarian belladonna root. Because of the world situation, the Bulgarian root is difficult to obtain, and work done both in England and in this country has clearly shown that if equally good root is obtained from other countries, the Bulgarian root is not essential. As pointed out in the literature, the earlier work done by Sharp and Dohme emphasized the instability of the wine extract. Consequently, the standard wine extract of Bulgarian belladonna root was analyzed for its component parts, and the three principal alkaloids, in purified form, were recombined in the same proportions to form Rabellon tablets. There is, therefore, no reason to suspect that Bellabulgara would be any more therapeutically effective than this standardized product. On the other hand, the burden of proof rests in the hands of the clinician who should test out both products without bias.

Dr. Neal (*Concluding Remarks*)—Homburg 680 is not at all the same as the wine decoction of the Bulgarian roots of belladonna originally prepared by Raefl. It is prepared in an acid medium, and according to reports, mainly from English authors, these acid preparations are more toxic than decoctions made in wine. However, the decoction in wine is not carried out by boiling as Dr. Vollmer has indicated. The comparative study made at Welfare Hospital seemed to me a very fair one, and the results were certainly far better with Bellabulgara than with Rabellon. In both groups, the patients knew they were taking a new medication, and therefore the psychologic element cannot have been a factor.

It is true that it is difficult at the present time to obtain the Bulgarian root, but arrangements have been made so that an adequate supply of the alkaloids from this root is in the United States. There should be, therefore, no concern over the availability of Bellabulgara.

Doctor: "I've got to get rid of my chauffeur—he's nearly killed me four times."

Wife: "Oh, give him another chance!"—*Medical World*

sequently developed a psoas abscess and abdominal fistula, with pus discharging from the fistulous tract. There was a persistent diarrhea. At this time fecal culture revealed an organism identified as slightly atypical culturally but clearly *B. alkalescens* serologically.

Chronic Ulcerative Colitis

The following group of seven cases will be described briefly, as all presented the characteristic symptoms and signs of chronic ulcerative colitis. Sigmoidoscopic and roentgenographic evidence was obtained in each instance. All had positive fecal cultures for *B. alkalescens*.

Case Reports

Case 5—L. S., woman, aged 24, was referred by Dr. C. C. Mandelbaum. The onset of the disease occurred two years previously with sixteen to eighteen bloody, diarrheal movements. At the time of inception a brother-in-law, sister-in-law, and niece also had diarrhea. At eight months the patient's infant had bloody, diarrheal movements for three days.

Case 6—M. C., man, aged 28, who had been seen by Dr. John L. Kantor, was hospitalized at Bellevue and Montefiore hospitals. The patient at the time of observation had had chronic ulcerative colitis for three years. He exhibited marked emaciation, Mendicant's posture, and advanced pseudopolypoid cystica, often passing pinched-off polyps by the rectum.

Case 7—R. M., man, aged 46, was referred by Dr. I. H. Dolin. The onset occurred fifteen months previously while in the country, near Ellenville, New York. Both the patient and a cousin had diarrhea which lasted about one week. Following this acute phase, recurring attacks of diarrhea and abdominal cramps were noted, for which the patient was hospitalized. These attacks would last several months and were accompanied by pyrexia. Often twenty movements occurred each night. At the time of our examination extreme luminal stenosis, mura, fibrosis, and pseudopolypoid were present, and the fecal discharges were grossly purulent in character.

Case 8—F. W. H., woman, aged 40, was referred by Dr. George T. Pack and Dr. William F. Costello. The onset occurred five months previously with intestinal bleeding. At the time of our examination the patient was extremely weak and emaciated and was suffering from abdominal cramps and diarrheal, bloody bowel movements. Diarrhea generally preceded the intestinal bleeding. The mucosal exudate was

purulent in character. The patient's mother died three years previously of intestinal bleeding, which had been present intermittently for three years.

Case 9—F. F., woman, aged 34, was referred by Dr. M. Grollman. The onset of symptoms occurred seven or eight years before coming under our observation while vacationing in Ellenville, New York. At this time she and a friend were taken ill with abdominal pain, fever, and diarrhea. Since then there have been periodic recurring attacks of cramps and diarrhea, often bloody.

Case 10—A. L., man, aged 24, was admitted to the Bronx Hospital through Dr. H. Schoenberg for operative treatment of a duodenal ulcer. The patient had experienced intermittent attacks of diarrhea for the past four years. While he was in the hospital, frequent watery bowel movements were noted. Positive cultures for *B. alkalescens* were obtained both from the intestine and the abdominal wound. This patient was suffering from two apparently unrelated conditions, viz., chronic ulcerative colitis and duodenal ulcer. This was corroborated by necropsy findings.

Case 11—M. B., girl, aged 15, had been admitted to the Bronx Hospital five years previously for abdominal pain and diarrhea. The blood agglutination titer was 1:160 but initial fecal cultures proved negative. Subsequently, however, *B. alkalescens* was isolated, the strain being agglutinated in a dilution of 1:10,240 by our diagnostic serum.

Cases of Doubtful Significance

These cases involved three nurses within a period of a few weeks in May, 1940, and are significant for two reasons. First, these positive fecal cultures were obtained in the course of our routine monthly surveys, which have been carried out since December, 1933, on all food handlers, lay, and professional personnel on the obstetric and pediatric services at the Bronx Hospital. At no time during that period was a positive culture for *B. alkalescens* obtained in these or any other of the personnel specified until those mentioned above in May, 1940. More than 3,010 fecal cultures have been carried out on these individuals, all of whom receive careful physical, roentgenographic, and laboratory examinations to establish the absence of active disease. We feel that this represents a suitable

and B dispar in 13 per cent, neither having been previously reported in the Philippines. De Assis²³ recovered B alkalescens from 5 undoubted cases of human intestinal infection one of which proved fatal. He subsequently reported the same finding in the mucopurulent fecal discharges of a patient with chronic dysentery. Neter²⁴ isolated B alkalescens from a pararectal abscess and from the feces of a patient with colitis. Snyder²⁵ reported the organism in a baby six weeks old, with six to eight greenish, mucoid, and watery bowel movements daily.* Similar findings were obtained from 2 normal babies, one father exhibiting the same strain. Cooper, *et al*,²⁶ studied 209 cases of acute diarrhea among infants and children and obtained positive cultures of B dysenteriae in 102 (49 per cent), of which 6 were dulcitate fermenters (i.e., presumably B alkalescens). Nabarro and Edward²⁷ described 17 cases of proved and probable infection with B alkalescens. These were divided into the following groups: (1) acute diarrhea, (2) recurring diarrhea, (3) double infections (concomitant Sonne-Duval infection), and (4) fever, constipation, and pyelitis. They cited one instance of contact infection in a hospital ward and believed that the organism was capable of giving rise to a mild form of acute dysentery or chronic colitis, the infection being primarily intestinal.

To the above group of cases may be added 14 that we have been privileged to study, viz., 3 of acute bacillary dysentery, one of chronic distal ileitis, 7 of chronic ulcerative colitis, and 3 of doubtful significance.

Case Reports

Case 1—E. S., girl, aged 13, was admitted to the Bronx Hospital with complaints of abdominal pain, particularly in the right lower quadrant, fever, and loss of weight three weeks previously. The patient was constipated. The temperature varied from 99.6 to 101 F. At the time of admission the symptoms and signs appeared to be receding, the patient being quite comfortable and soon thereafter, afebrile.

* Dr. Snyder kindly furnished the strain recovered from this case. Culturally and serologically it is identical with the twenty-two strains in our collection.

Sigmoidoscopic examination revealed an edematous reddened and hemorrhagic mucosa in the rectosigmoid with large masses of adherent mucus. The lymph nodules were hypertrophic, being readily visualized through the inflamed mucosa. The mucosal exudate revealed a marked preponderance of polymorphonuclear neutrophils, and repeated cultures were positive for B alkalescens. The patient's organism was agglutinated by her serum to a titer of 1:640. A stock strain was agglutinated only in 1:80. A history of diarrhea was obtained in a sister, but further investigation was not permitted. This case may be properly classified as the appendicular form of acute bacillary dysentery—constipated type.

Case 2—L. S., man, aged 23, was admitted to the Bronx Hospital because for twenty-four hours he had had an abdominal pain that was most marked in the right lower quadrant. A diagnosis of acute appendicitis was made, and operative intervention revealed an acute gangrenous appendicitis. Diarrhea occurred on the third day when B alkalescens was recovered from the feces. The patient's serum showed an agglutination titer of 1:2,560 and the fecal organism was agglutinated in a dilution of 1:20,480 by our diagnostic alkalescens serum. Clinically, this case may possibly be a rare type of the acute appendicular form of bacillary dysentery with secondary intramural infection resulting in acute appendicitis.

Case 3—S. B., physician, aged 32, was referred by Dr. A. M. Sala. One week previously the patient experienced the sudden onset of watery diarrheal movements, which averaged seven to eight daily. Indefinite abdominal discomfort was present, and on one occasion some membrane and considerable mucus was noted in the feces. Sigmoidoscopy revealed receding stages one and two (punctate follicular hypertrophy and hyperplasia), with inflamed mucosa and purulent exudate. Sigmoidoscopic crypt culture was positive for B alkalescens, which was agglutinated by diagnostic serum in a dilution of 1:2,560. Two weeks later the patient was re-examined bacteriologically and by sigmoidoscopy, following vaccination with polyvalent autogenous and stock alkalescens strains. At this time the intestinal mucosa was seen to be entirely normal, no polymorphonuclear cells were noted in the exudate, and the patient was free of symptoms.

Case 4 *Chronic Distal Ileitis (Regional Ileitis)*—We are indebted to Dr. R. M. Koster for the privilege of studying this case. Several months prior to this investigation a resection of diseased ileum had been done. The patient sub-

6 Urinary tract infections are relatively frequent, as sometimes noted with other members of the dysentery group

7 Until further observations are reported, it seems advisable to regard *B. alkalescens* as a potential or actual pathogen and to isolate patients harboring the organism

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"POPULAR REMEDIES USED BY SOUTHERN PEOPLE"

The Journal of the Medical Association of Georgia publishes this list of "Popular Remedies Used by Southern People" It was compiled by V H Bassett, M D, of Savannah, from reports of public health nurses, midwives, and other sources, and ought to be authentic

- 1 For cold, take Colt's foot candy
- 2 For lockjaw of the newborn, give a tea made of Cockroaches
- 3 For a dressing on the skin lesions of pellagra, use pot liquor (human urine)
- 4 For whooping cough, use a tea made of Sheeps' dung
- 5 To stop hiccup, apply a piece of paper wet with cold water, to the forehead
- 6 To aid a woman in childbirth, let her blow hard in a bottle.
- 7 Remedy for "Risen Breast" Apply fresh cow manure while still warm This is an old pioneer remedy
- 8 For earache, apply a hot roasted onion.
- 9 To remove warts, make the wart bleed and put blood on the eye of a grain of corn, then feed the corn to a chicken
- 10 To stop afterbirth pains, place an axe under the mattress, so that blade will be

right under the patient's hips It will cut the pains off

- 11 To prevent conception, swallow a buck shot after each menstrual period
- 12 Remedy for earache or toothache, scorch cotton and put wax from ear on it and place in ear or on tooth
- 13 Nose bleed put brass key down back, or put salt on top of head
- 14 To make teething easy for baby, tie nutmeg around neck
- 15 To stop hiccup, put a brown paper bag over face and neck
- 16 To help pains in baby's abdomen, feed milk from mother's breast with tobacco smoke blown in it
- 17 To make teething easy for baby, find nine lice from the bark of an old tree and tie them in a bag, around the baby's neck.
- 18 To prevent lockjaw after stepping on a rusty nail, apply ink to the wound
- 19 For sores, apply Romany Balm, an ointment made from fat of the kidney of the pig, clippings from the frog of a horse's hoof, houseleek, and the bark of the Elder Tree.

HOT OR COLD, YOU LOSE

The role which extremes in temperatures play in reducing resistance to colds is explained in *Hygeia, The Health Magazine*, which states "Overheating causes drying of the mucous membranes of the nose and throat, increasing the ease with which germs may invade it Chilling may produce congestion in the nose and thus also make it easier for infection to take place"

WHY PROOFREADERS GO GAGA

Layman "I understand that you have devoted your life to the study of disease germs?"

Great Scientist (proudly) "I have"

Layman "Have you found a remedy for any of them?"

Great Scientist "Well, no, but I have succeeded in finding good long names for them all"

—Christian Union Herald

control group, particularly since repeated fecal cultures are carried out on the same individuals, by the same two bacteriologists using identical technical procedures. All of the 3 nurses affected revealed diagnostic agglutination titers against their own organisms (1 160 or over) and in one instance reached 1 1,280. In 2 instances titers of only 1 80 were obtained against a stock *B. alkalescens* strain. Second, none of the 3 nurses involved had diarrhea and up to the present have declined sigmoidoscopy. In view of the findings in Case 1 in which active intestinal lesions were present without diarrhea, the possible existence of similar pathology must be entertained in the 3 cases described. It is of interest that the nurses and the patient referred to as Case 1 were in the hospital during the same general period of late April and early May, 1940. No contact occurred since the patient was isolated in an adult ward. It suggests the possibility that at this time *B. alkalescens* infections may be increasing in New York City. We have noted similar beginnings in the case of Sonne-Duval and Flexner outbreaks. It may also be significant that Gilbert and Coleman²⁸ report that 1 per cent of the fecal specimens submitted to the New York State Department of Health laboratories are positive for *B. alkalescens*. A similar condition appears to prevail in New York City, for fecal cultures are usually submitted by physicians when there is clinical evidence of intestinal infection.

In the laboratory diagnosis of acute *B. alkalescens* infections, the same general rules apply as to other dysentery infections. A rising agglutination titer, positive culture, and diagnostic bacteriophage establish the diagnosis beyond question. In normal human serums the agglutination titer, according to Neter, rarely exceeds 1 80. The antigenic structure of *B. alkalescens* and *B. dysenteriae* Flexner are similar. Agglutinin absorption tests, however, suggest the presence of two antigenic factors in *B. alkalescens*, one like that of the Flexner organism and another specific for *B. alkalescens* (Neter).

The pathogenicity of *B. alkalescens* for rabbits has been demonstrated by De Assis who succeeded in infecting his animals by the oral administration of living broth cultures preceded by bile. In travenous inoculation of 2 cc of a viable broth culture was usually fatal, producing characteristic lesions in the ileum and colon. Cooper infected mice by combining mucin with her culture. We have been able to infect mice by the intraperitoneal injection of toxic strains using 0.5 cc of an eighteen-hour broth culture.

In man, the clinical manifestations of bacillary dysentery are as protean as the cultural characteristics of the causative organisms. At least seven new clinical types have been described,²⁹⁻³² viz, appendicular with acute distal ileitis, meningitic, pneumonic, agranulocytoid, constipated, asymptomatic, and afebrile. The relationship of bacillary dysentery to chronic distal ileitis (regional ileitis) and chronic ulcerative colitis have been noted³³⁻³⁵. It is of particular interest that *B. alkalescens* appears to be implicated in our series of 3 cases of acute bacillary dysentery, one of chronic distal ileitis, and 7 of chronic ulcerative colitis.

Conclusions

1 Culturally and serologically, *B. alkalescens* is a member of the dysentery group.

2 Antigenically, *B. alkalescens* is similar to *B. dysenteriae* Flexner, exhibiting both group and type-specific characteristics.

3 *B. alkalescens* varies considerably in its pathogenicity both for the experimental animal and man, resembling in this respect other members of the mannite fermenting group.

4 In our series the organism is described as associated with acute bacillary dysentery in 3 instances, chronic ulcerative colitis in 7 instances, chronic distal ileitis in one instance, and of undetermined significance in 3 instances.

5 *B. alkalescens* infections are being reported with increasing frequency, asymptomatic, constipated, and afebrile forms appearing to be rather common.

Blood transfusion 9th day BC positive
7th day Recovered, left the hospital 16th day

Osteomyelitis

C S 9-12-39 55 M W Cellulitis, septicemia Primary between smallest toes on left foot. Six days before hospital admission. Incision, drainage 9th day Sulfanilamide. Blood transfusion 9th day BC positive 7th day, negative 16th day Recovered, left hospital 39th day

S H 9-13-26 14 F W Furuncles septicemia Primary upper back and cervical region. Ten days before hospital admission. General care home and hospital. BC positive 11th day Died 12th day

D L 9-5-32 18 M W Furuncles, septicemia Primary face. Fourteen days before hospital admission. Several furuncles incised before hospital admission. Blood transfusion 15th, 20th day BC positive 5th, 8th 15th day Died 22nd day

S G 8-23-33 23 M W Furuncles septicemia Primary left forearm and right index finger Several days before hospital admission. Trauma, baseball four days before hospital admission. General care. BC positive 8-23-33 Died 8-25-33

F R 5-28-38 14 M W Furuncles septicemia Primary right knee. Trauma by patient. Four days before hospital admission. Blood transfusion 6th, 8th day Prontosil and sulfanilamide. BC positive 5th day Died 8th day

G K 11-2-24 14 F W Carbuncle (infected endothelioma), septicemia Primary upper lip Two days before hospital admission. Trauma by patient. Incision 5th day Tissue removed, microscopical examination. Gentian violet intravenous 7th day BC positive 5th 6th day Died 7th day

A S 1-16-26 65 M W Carbuncle, septicemia, diabetes Primary right side of face. Twenty-one days before hospital admission. Incision 22nd day BC positive 26th day Died 27th day

L C 9-27-30 26 M W Carbuncle, septicemia Primary right chest wall, axillary region. Fourteen days before hospital admission. Trauma by patient nine days before Incision drainage 16th day Blood transfusion 19th 21st, 23rd, 26th, 27th day Staphylococcus vaccine (autogenous) beginning 24th day BC positive 16th, 18th 21st, 26th, 34th, 53rd day negative 42nd, 58th day Recovered, left hospital 100th day

B L 8-16-32 47 M W Carbuncle, septicemia, diabetes Primary back of neck. Seven days before hospital admission. Incision 10th day Blood transfusion 14th day BC positive 10th day Recovered, left hospital 99th day

H K 8-31-33 45 M W Carbuncle septicemia Primary back of neck. Six days before hospital admission. Incision 7th day Died 7th day

A H 12-3-34 35 M W Carbuncle, septicemia Primary back of neck Ten days before hospital admission. Incision drainage transfusion 18th, 20th 22nd, 24th, 26th, 28th, 30th 32nd 34th 36th day BC positive 14th 21st, 34th day Died 46th day

J H 2-3-22 9 M W Osteomyelitis, septicemia Trauma. Left tibia Three days before hospital admission. Operation left tibia 5th day BC positive 5th day Died 6th day

G J 7-13-23 49 M W Osteomyelitis, septicemia Trauma with laceration. Left index finger, 2nd phalanx. Twenty-five days before hospital admission Amputation 3rd phalanx 26th day, 2nd phalanx 47th day BC positive 43rd day Recovered left hospital 54th day

S T 1-1-25 9 F W Osteomyelitis, septicemia Trauma Right femur Four days before hospital admission. Operation right femur 5th day, left radius 7th day, left femur 12th day, sternum 17th day Gentian violet intravenous 10th, 11th, 13th day Blood transfusion 12th, 15th, 17th, 19th, 24th day BC positive 6th, 11th, 13th, 15th, 18th, negative 23rd, 29th day Recovered, left hospital 139th day

E K 2-18-25 13 M W Osteomyelitis, septicemia Trauma Left femur Three days before hospital admission. Operation left femur 4th day Gentian violet intravenous 6th, 7th, 8th day Blood transfusion 12th day BC positive 4th, 6th, 7th, 9th day Died 16th day

F R 2-25-25 12 M W Osteomyelitis, septicemia Left radius Seven days before hospital admission. Operation left radius 51st day BC positive 8th, 10th, 14th day, negative 19th day Recovered left hospital 80th day

H H 6-15-25 9 M W Osteomyelitis, septicemia Left tibia Three days before hospital admission. Operation left tibia 4th day, right humerus 7th day, left femur 12th day, BC positive 6th, 12th day, negative 19th day Recovered left hospital 44th day

R B 12-22-25 10 F W Osteomyelitis, septicemia Trauma, right tibia Ten days before hospital admission. Operation right tibia 12th day BC positive 13th day, negative 27th day Recovered, left hospital 79th day

S M 2-21-29 10 M W Osteomyelitis, septicemia Infected blister little toe right foot, trauma right leg Right tibia Three days before hospital admission. Operation right tibia 4th day BC positive 4th day negative 9th day Recovered left hospital 24th day

E D 1-14-33 10 M W Osteomyelitis, septicemia Small pustule left ankle Left tibia. Six days before hospital admission. Operation left tibia 7th day BC positive 7th day Spinal fluid positive 9th day Died 9th day

L B 3-26-33 3 M W Osteomyelitis, septicemia Trauma Left tibia Four days before hospital admission. Operation left tibia 6th day Blood transfusion 8th day BC positive 5th day Died 10th day

T K 11-6-33 6 F W Osteomyelitis, septicemia Right femur Four days before hospital admission. Operation right femur 6th day, left fibula 7th day Blood transfusion 7th 9th, 11th day BC positive 5th 6th day Died 12th day

L C 12-30-33 13 M W Osteomyelitis, septicemia pericarditis left pleuritis Trauma. Right femur Two days before hospital admission. Operation right femur 11th day, left femur 14th day Blood transfusion 18th 26th

STAPHYLOCOCCUS AUREUS SEPTICEMIA

O W H MITCHELL, M D , and O D CHAPMAN, M D , * Syracuse, New York

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INCREASED interest in therapy, particularly chemotherapy, of staphylococcic disease, especially those conditions with blood-stream invasion, is the chief reason for this publication. The data may help in judging the value of newer methods of treatment. This report concerns a relatively large series of *Staphylococcus aureus* infections with positive blood cultures. The positive cultures on these 38 patients comprise a group out of a series of 4,956 blood cultures taken for various reasons on 3,977 patients during the period October 1, 1921, to January 1, 1940. In the brief histories are remarks regarding treatment employed.

It is realized that the report would be more useful if certain important biologic characteristics of the various strains of staphylococci isolated had been ascertained and the number of bacteria per cubic centimeter determined. One cannot question the value of such data but the absence does not invalidate the findings for the purpose intended. Wide variations in virulence of strains and in susceptibility of individuals are factors of great importance also, but cannot be readily or accurately determined.

There were some patients with positive *Staphylococcus aureus* blood cultures whose histories are not included in this series as they did not have primary staphylococcic cellulitis, furuncles, carbuncles, or osteomyelitis to which this report is limited.

The brief case histories include the following initials of patients, date of admission to hospital, age, sex, race, final diagnosis, site of primary infection, duration of illness before hospitalization, treatment, day of disease blood culture (B C) was made, and day of death or discharge from hospital.

Case Histories—Cellulitis, Furuncles, Carbuncles

G H 8-14-22 5 yrs M W Cellulitis right foot and leg, septicemia. Primary toes right foot. Six days before hospital admission. General care home and hospital. Blood culture positive 7th, 11th day. Died 11th day.

K C 10-10-24 19 M W Cellulitis left eye region, cavernous sinus thrombosis, septicemia. Primary left eye region. Three days before hospital admission. Gentian violet intravenous 7th, 8th day. Incision under left eye 8th day. Nonspecific protein therapy 7th, 9th day. B C positive 5th, 8th, 9th day. Died 9th day.

R L 12-6-26 11 M W Cellulitis, infected blister right heel, bronchopneumonia, septicemia. Primary right heel. General care home. Ten days before hospital admission. Gentian violet intravenous 13th day. B C positive 11th, 12th day. Died 13th day.

M R 2-10-30 18 M W Cellulitis, infected blister right heel, septicemia, embolic pneumonia. Primary right heel. General care home. Twelve days before hospital admission. Incision, drainage 13th day. B C positive 13th day. Died 13th day.

E N 11-16-32 41 M W Cellulitis nose, cavernous sinus thrombosis, septicemia. Primary tip of nose. Three days before hospital admission. General care and antistreptococcus serum. B C positive 4th day. Died 5th day.

E C 10-9-35 50 M W Cellulitis, septicemia, diabetes. Primary right forehead. Four days before hospital admission. Antistreptococcus serum. Incision, drainage 8th day. B C positive 8th day. Died 9th day.

C F 2-5-39 20 M W Cellulitis, thrombophlebitis, septicemia. Primary left index finger. Trauma by patient four days before hospital admission. Incision, drainage two days before hospital admission. Four days before hospital admission. Sulfanilamide. Operation 11th day dorsum of hand and forearm, incisions, drainage, removal thrombosed vein 11th day. Blood transfusion 9th, 13th day. B C positive 5th, 8th, 12th day, negative 19th, 30th, 43rd day. Recovered, left the hospital 53rd day.

K H 8-12-39 16 M W Cellulitis, septicemia. Primary base left index finger. Several days before hospital admission. Incision, drainage 8-10-39. Blood transfusion 8-13-39. Sulfanilamide. B C positive 8-12-39, 8-13-39. Died 8-13-39.

E H 8-26-39 12 F W Cellulitis, septicemia. Primary right forearm. Trauma six days before by patient. Cellulitis right ankle, three days before hospital admission. Incision, drainage right heel and leg 9th day. General care of lesion on right forearm. Sulfanilamide

* The writers are indebted to Miss Ruth I. Stephens for assistance in compiling and tabulating the records.

considerable difference when patients are classified according to location of primary lesions. This observation has been recorded in medical literature for quite a while and its importance is evident in this compilation. Tables 1 and 2 have been prepared to make this readily apparent.

Summary

1 Age and sex incidence in these groups are in accord with other reports in the literature

2 Nearly all the osteomyelitis patients were children

3 Males greatly outnumbered females

4 Half of the patients with cellulitis, furuncles, and carbuncles had primary lesions on the neck or face

5 Of the 18 patients with osteomyelitis, the tibia was the first bone involved in 9 and the femur in 6

6 Fifteen of the 20 patients with primary skin lesions died

7 Seven of the 18 patients with osteomyelitis died

EXAMINATIONS—AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY

The annual written examination and review of case histories (Part I) for Group B candidates will be held in various cities of the United States and Canada on Saturday, January 4, 1941, at 2:00 P.M. Candidates who successfully complete the Part I examinations proceed automatically to the Part II examinations held later in the year.

The following action regarding case records to be submitted by candidates taking the Group B, Part I, examination after January 1, 1942, was passed by the Board at its annual meeting in Atlantic City, N. J., on June 6, 1940. "Case records submitted by candidates must be of patients treated within four years prior to the date of the candidate's application. The number of cases taken from one's residency service should not be more than half (25) of the total number of fifty (50) cases required."

Applications for admission to Group B, Part I, examinations must be on file in the Secretary's Office not later than October 5, 1940.

The general oral and pathologic examinations (Part II) for all candidates (Groups A and B) will be conducted by the entire Board, meeting at Cleveland, Ohio, immediately prior to the June, 1941, meeting of the American Medical Association.

After January 1, 1942, there will be only one classification of candidates, and all will be required to take the Part I and Part II examinations.

In response to numerous inquiries regarding special training requirements, the Board desires to announce again that there are three methods of meeting these requirements for admission to

the Board examinations. First, by the residency system, second, by the partial residency and partial assistantship method, and third, entirely by the assistantship or 'preceptorship' method. Details of the residency requirements are given in the Board booklet, sent by request.

The Board will accept in lieu of the formal residency service the training acquired by a candidate serving on an assistant or dispensary staff of an obstetric and gynecologic division of a recognized hospital, under the direction of a recognized obstetrician-gynecologist (preferably a diplomate). The time required for this type of training must be longer than with the formal, more intensive residency type of training, and the allowance of time depends upon the duties and responsibility given the candidate. Applicants lacking all formal special training should have a minimum of five years of hospital clinic, or assistant hospital staff appointments in the specialty, under approved direction. Teaching appointments without accompanying hospital staff or clinical appointments will not satisfy the Board requirements. A special form amplifying the original application must be filled out to cover the details of such assistantship or preceptorship type of training. The Board approves for special training work done in institutions approved jointly by the Board and by the Council on Medical Education and Hospitals of the American Medical Association.

For further information and application blanks, address Dr. Paul Titus, Secretary, 1015 Highland Building, Pittsburgh (6), Pennsylvania.

MEDICINE ON WHEELS

In the Danube region formerly belonging to Austria, a so-called health wagon has been put into use among the farming communities, reports the *J. A. M. A.* It consists of an automobile in which the rear seats have been removed and a medicine chest built in containing medical instruments, a scale for weighing children, and a card index of the mothers and children in the various villages. The physician is his own chauffeur. He is accompanied by a social welfare nurse. The service cares for infants and preschool children and offers advice to

mothers similar to that given in maternity and children's welfare stations in cities. Children receive medical care from the time they are born to the fourteenth year. Particular attention is paid to rickets and digestive disturbances. The work is done in close cooperation with the physicians and hospitals of the district. Similar health vehicles are planned for other Austrian districts. The villages and settlements are visited in regular rotation, about every two weeks on the same day. The medical service is free.

TABLE 1—CELLULITIS FURUNCLES CARBUNCLES

Number	Age	Sex	Primary Lesion	Blood Culture, No Positive	Result
1 G H	5	M	Cellulitis right foot and leg	2	Died 11th day
2 R L	11	M	Cellulitis, blister right heel	2	Died 13th day
3 E H	12	F	Cellulitis right forearm	1	Recovered, 16th day*
4 G K	14	F	Carbuncle, upper lip	2	Died 7th day
5 S H	14	F	Furuncles, back and neck	1	Died 12th day
6 F R	14	M	Furuncle right knee	1	Died 8th day
7 K H	16	M	Cellulitis base left index finger	2	Died**
8 D L	18	M	Furuncles face	3	Died 22nd day
9 M R	18	M	Cellulitis infected blister right heel	1	Died 13th day
10 K C	19	M	Cellulitis left eye region	3	Died 9th day
11 C F	20	M	Cellulitis, left index finger	3	Recovered 63rd day*
12 S G	23	M	Furuncles, left forearm, right index finger	1	Died**
13 L C	26	M	Carbuncle right chest wall	6	Recovered 100th day*
14 A H	35	M	Carbuncle back of neck	3	Died 46th day
15 E N	41	M	Cellulitis nose	1	Died 5th day
16 W K	45	M	Carbuncle back of neck	1	Died 7th day
17 B L	47	M	Carbuncle back of neck	1	Recovered 99th day*
18 E C	50	F	Cellulitis right forehead	1	Died 8th day
19 C S	55	M	Cellulitis, small toes left foot	1	Recovered 89th day*
20 A S	65	M	Carbuncle right side face	1	Died 27th day

* Day of disease patient left hospital.

** Duration questionable See history

TABLE 2—OSTEOMYELITIS

Number	Age	Sex	Bone	Complications	Blood Culture, No Positive	Result
1 L B	3	M	Left tibia		1	Died 10th day
2 H P	4	M	Right astragalus	Abscess right ankle	1	Recovered 47th day*
3 H C	5	F	Right femur		1	Recovered 47th day*
4 T K	6	F	Right femur	Left fibula	2	Died 12th day
5 A C	6	F	Right tibia	Pneumonia, parotitis multiple abscesses	3	Died 33rd day
6 J H	9	M	Left tibia		1	Died 6th day
7 S T	9	F	Right femur	Left radius, left femur, sternum	5	Recovered, 189th day*
8 H W	9	M	Left tibia	Right humerus left femur	2	Recovered, 44th day*
9 R B	10	F	Right tibia		1	Recovered 79th day*
10 S M	10	M	Right tibia		1	Recovered, 24th day*
11 F D	10	M	Left tibia	Meningitis	1	Died 9th day
12 F R	12	M	Left radius		3	Recovered 80th day*
13 E K	13	M	Left femur		4	Died 18th day
14 L C	18	M	Right femur	Left femur pericarditis left pleuritis	3	Recovered 180th day*
15 J S	14	M	Right femur		1	Recovered, 57th day*
16 J S	40	M	Left tibia	Left fibula, amputation leg	2	Recovered, 50th day*
17 G J	49	M	2nd phalanx left index finger	Removed 3rd and 2nd phalanges	1	Recovered, 64th day*
18 M J	57	M	Right tibia	Left femur	3	Died 33rd day

* Day of disease patient left hospital

day B C positive 3rd, 9th, 20th day, negative 28th, 54th, 65th day Percardial fluid positive 22nd, 27th day Left pleural fluid positive 42nd, 48th day Recovered, left hospital 130th day

H C 1-23-34 5 F W Osteomyelitis, septicemia Trauma Right femur Seven days before hospital admission. Operation right femur 8th day B C positive 9th day Recovered, left hospital 47th day

J S 8-4-34 40 M W Osteomyelitis, septicemia Osteomyelitis same location 33 years ago, operation Also recent trauma left tibia and ankle. Left tibia Fifteen days before hospital admission Operation left tibia 17th day, left fibula 34th day, amputation 39th day Blood transfusion 26th, 37th, 39th day B C positive 23rd, 25th day Recovered, left hospital 59th day

M J 8-17-34 57 M W Osteomyelitis, septicemia, bronchopneumonia two weeks before hospital admission Right tibia Seven days before hospital admission Operation right tibia 8th day, left femur 12th, 27th day B C positive 8th, 11th, 28th day Died 33rd day

J S 3-27-35 14 M W Osteomyelitis,

septicemia Trauma right femur Two days before hospital admission Operation right femur 4th day Blood transfusion 11th day B C positive 6th day Recovered, left hospital 57th day

A C 8-11-36 6 F W Osteomyelitis, septicemia, pneumonia, parotitis, multiple abscesses Trauma right ankle. Right tibia Seven days before hospital admission Incision, drainage right tibia 9th day Abscess right shoulder 31st day Incised 31st day Blood transfusion 11th, 12th, 14th, 18th, 23rd, 30th day Staphylococcus antitoxin intramuscularly 31st, 32nd day B C positive 8th, 10th, 16th day Died 33rd day

H P 10-11-39 4 M W Osteomyelitis, septicemia, abscess right ankle Right astragalus Six days before hospital admission Trauma Incision, drainage 7th day Sulfanilamide Blood transfusion 22nd day B C positive 7th day, negative 12th, 21st 27th, 35th day Recovered, left hospital 47th day

Case fatality rates in staphylococcal disease with positive blood cultures show

slow intravenous infusion, supplemented with (3) fluids given as 5 per cent glucose in distilled water. No other therapy of any kind was administered.

The patient was estimated to have been in a coma fourteen hours at the time the picrotoxin was instituted. He was treated continuously without interruption for seventy-eight hours. All of the solutions were administered by continuous intravenous infusion at the rate of 60 to 60 drops per minute. During the first twenty-four hours of treatment the patient received 139 mg of picrotoxin, 75 Gm of glucose, 375 Gm of sucrose, 18 Gm of sodium chloride, and 2,750 cc of fluid. The only evidence of any effect occurred when the patient became somewhat restless prior to voiding involuntarily. The restlessness subsided afterward. The patient had excellent diuresis after the sucrose. During this period the temperature rose slowly to 101 F, the pulse varied from 112 to 116 beats per minute, the respirations remained constant and shallow at 20 per minute, and the blood pressure was unchanged at 122/60.

During the second twenty-four hours of treatment the patient received an additional 150 mg of picrotoxin, 75 Gm of glucose, 250 Gm of sucrose, 18 Gm of sodium chloride, and 3,000 cc of fluid. At no time was moisture detected in the chest, and mucus in the throat was not troublesome. Sucrose continued to produce diuresis. The temperature rose to 104 F at about the fortieth hour of treatment apparently due to dehydration. Therefore, during the subsequent treatment the sucrose was omitted. During the second twenty-four-hour period of the treatment the pupillary reaction returned, and the achilles reflexes could be obtained. The patient would respond by moving his arms, grimacing, or groaning when strong pressure was applied to the sternum. The pulse rate rose to 130, the respirations to 22, and the blood pressure fell to 116/80. No fibrillary twitching of the muscles was observed at any time.

During the third twenty-four hours of treatment, the patient received an additional 231 mg of picrotoxin, 100 Gm of glucose, and over 3,000 cc. of fluid. Nine milligrams of the picrotoxin was given intramuscularly because of difficulty in keeping the intravenous infusion needle in place. There was a marked change in the condition of the patient. He became hyperactive and had to be restrained with a canvas bed cover. He screamed loudly and roused slightly at times when spoken to or when pressure was applied to his sternum. All of the reflexes returned. His temperature dropped to 101 F, his pulse ranged from 100 to 110 beats per minute, his respirations

increased to 26 per minute and were deeper, and his blood pressure continued unchanged. Oil retention and cleansing enemas were given with satisfactory results and no evidence of fecal impaction.

After seventy hours of treatment the patient was so restless that intravenous infusions were impossible. Thereafter he received 3 to 6 mg of picrotoxin intramuscularly every hour for eight hours (total 39 mg). At the end of this time, after seventy-eight hours of treatment and ninety-two hours of coma, the patient was quieter, conscious, oriented, and able to talk coherently and to drink fluids. He complained of thirst and consumed by mouth over 1,000 cc in an hour. He was considered to be rational and to have recovered, and, therefore, the treatment was discontinued. However, he was aroused every hour during the following night to be certain no relapse was occurring. The patient received in all, 559 mg of picrotoxin, 39 mg of which was given intramuscularly and the rest intravenously. There was never the slightest evidence of fibrillary twitching of the muscles or of convulsions. In addition he received a total of 1,250 cc of 50 per cent sucrose intravenously. Physical examination at this time revealed no residual effects from the phenobarbital intoxication.

One week later the neisserian infection which had been demonstrated to be active by positive smears was given treatment with sulfamethylthiazole. The patient has responded satisfactorily.

Summary and Conclusion

A 25-year-old man, weighing 146 pounds (66.3 Kg), survived an estimated dose of 6 to 8 Gm (90 to 120 grains) of phenobarbital, taken with suicidal intent. The patient remained untreated for fourteen hours and was found in a deep coma with insensitive corneas and absent deep reflexes. He failed to respond to physical stimulation. The patient was treated continuously for seventy-eight hours with intravenous picrotoxin alternating with intravenous sucrose. He gradually became more restless, passed through a stage of maniacal excitement, and finally became rational after ninety-two hours of coma. He received a total of 559 mg of picrotoxin and 1,250 cc of 50 per cent sucrose. He exhibited good diuresis after the sucrose. Pulmonary congestion and fibrillary twitching of the muscles did not

PICROTOXIN TREATMENT OF BARBITURATE POISONING

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IN A recent communication,¹ Dr E C Reifenstein, Sr, and I collected and reviewed from the literature the cases of barbiturate poisoning treated with picrotoxin and reported our own 2 cases of barbiturate intoxication that recovered with this antidote. I am recording herein our third case because (1) the patient recovered from a lethal dose of phenobarbital with no antidotal treatment except picrotoxin, (2) the patient was given one of the largest reported doses of picrotoxin (559 mg) without harmful effect, and (3) the patient failed to exhibit the depressed blood pressure usually observed in acute barbiturate poisoning.

Case Report

E P, a 25-year-old white man, weighing 146 pounds (66.3 Kg), was admitted to the Syracuse University Hospital on March 2, 1940, in a deep coma. The patient had been found comatose in bed shortly before admission. There was an empty bottle labeled phenobarbital on a stand nearby. History subsequently obtained from the patient revealed that he had developed an acute neisserian infection six weeks prior to admission, which had failed to respond to treatment. Four days prior to admission he began to have severe pain in the right shoulder. The patient became discouraged about the failure of his infection to respond to treatment, about the pain in his right shoulder, about the loss of his position, and about financial reverses, and he decided to commit suicide. Although he cannot state exactly how many phenobarbital tablets were taken, he admits ingesting a "handful." Inasmuch as the bottle originally contained 100 tablets, size 0 1 Gm ($1\frac{1}{2}$ gram), and had been but recently acquired, and inasmuch as 20 tablets were found in the bottle when the patient was discovered in coma, it was estimated that the dose consumed was about 60 to 80 tablets—6 to 8 Gm (90 to 120 grams). As far as could be discovered no vomiting had occurred, so it was assumed that the patient retained the entire dose. This dose was further verified by the amount of picrotoxin required for recovery.

The patient was discovered approximately ten to twelve hours after ingesting the phenobarbital. On admission the following observations were noted: a slight pallor, shallow respirations of 20 per minute, a pulse of 116 beats per minute, a blood pressure of 124/80, a rectal temperature of 99.4 F, constricted pupils, insensitive corneas, and absent reflexes. The heart sounds were of good quality, the lungs were without moisture. There were no blebs on the skin of the extremities. The patient was completely comatose and could not be aroused by painful stimulation. Attention is directed to the unusual finding of normal blood-pressure levels.

Laboratory data on admission revealed hemoglobin 14.5 Gm, r b c 4,750,000 per cubic millimeter, w b c 18,200 per cubic millimeter, and the differential count showed 82 per cent polymorphonuclear cells and 16 per cent lymphocytes. The films of the red cells were not remarkable. The admission urine examination revealed a clear yellow specimen with a specific gravity of 1.056, no albumin, no sugar, no acetone, and no diacetic. Microscopic examination was not remarkable. The nonprotein nitrogen of the blood was 26, and the blood sugar was 83 mg per hundred cubic centimeters. The blood Wassermann test was negative. Subsequent roentgen ray examination of the lungs and the right shoulder revealed no pathologic findings.

When treatment was instituted, it was felt that gastric lavage was not indicated because of the interval that had elapsed since the ingestion, further, there was some danger in passing a stomach tube in a patient so completely relaxed. The respiration did not appear sufficiently depressed to warrant oxygen. Mucus in the throat was negligible and did not require special treatment or suction. Because of the acute urethritis, the insertion of an indwelling catheter, which ordinarily is indicated in the treatment regimen, was omitted, and fortunately the patient voided involuntarily every ten to twelve hours during the treatment period.

In treating the patient, external heat was applied at once. It was decided to utilize only (1) the slow, continuous intravenous infusion of picrotoxin in 0.01 per cent solution (50 mg in 500 cc of 5 per cent glucose in normal saline), alternating with (2) 250 cc. of 50 per cent sucrose as a

ELECTRICALLY INDUCED CONVULSIONS IN THE TREATMENT OF MENTAL DISEASES*

RENATO ALMANI, M D , and DAVID J IMPASTATO, M D ,† New York City

THE most recent forms of treatment of mental diseases are the so-called "shock therapies," which were introduced by Sakel, Meduna, and Cerletti. The method of Cerletti,¹ the most recent, consists of the induction of convulsions by the use of the ordinary alternating current (electroshock therapy). He introduced this method in Italy in 1937, after he had previously experimented with dogs and had perfected a machine that was perfectly safe to use. Since then the method has been introduced in Germany, England, and the United States, and up until the present thousands of convulsions have been induced.

The types of cases treated have been the schizophrenias, the manic-depressive group, and hysteria. The most favorable results have been obtained in cases of recent onset, in catatonic and depressive stupor, and in the group of schizoid-depressives. Deteriorated schizophrenics, and those with fixed delusions respond poorly. The results with electroshock almost parallel those with Meduna's metrazolshock, which, according to Sogliani,^{2a, b} are around 80 per cent complete or partial remissions in cases which have been ill less than one year.

There are certain disadvantages and complications of metrazol therapy that do not occur with electroshock therapy.^{2a, b, c} Foremost is the horrifying feeling of dislocation and death experienced prior to the convulsion which makes the patients reluctant to continue the treatment. Secondly is the distressing psychomotor excitement often lasting hours, which usually occurs at the end of a fit. These disadvantages do not occur with electroshock. Cardiac arrhythmias, auricular fibrillation, and heart block have been reported after metrazol but not after elec-

troshock. While dislocation of the jaw and fractures of the femora and vertebrae are relatively frequent after metrazol they have been very rare after electroshock. There has been a low incidence of mortality with metrazol, and none with electroshock. Finally, there is no difficulty with inaccessible or thrombosed veins with electroshock.

The most important advantage of electroshock is the absolute unconsciousness produced. Thus, the patients, having no memory of the attack, do not show any reluctance to continue the treatments. Secondly, it is always possible to produce an attack once the convulsive threshold has been determined. This avoids the excitement which follows an insufficient dose of metrazol. In general, there is no postconvulsive excitement, or when it is present it is very mild. The convulsion is less violent than that produced by metrazol. The method is simple and can be applied to a large number of patients with a minimum personnel.

The machine is supplied by the ordinary alternating house current of 110 volts. It contains two circuits: a direct to measure the resistance of the patient's head, and an alternating to produce the convulsion. A change-over switch selects the current desired. The electrodes consist of silver ribbons mounted on rubber pads. These are in turn mounted on metallic tongs which allow an easy application of the electrodes to the patient's head. The convulsive threshold for each patient is determined by beginning with low voltages, usually 60 volts, for one-tenth of a second. If this fails to produce a convulsion, a second attempt with slightly higher voltage can be made fifteen to thirty minutes later. In most cases convulsions, will occur with 80 volts.

The spell follows immediately after the current has been applied, or after a latent

* The electro-encephalographic studies were performed by Dr. Hans Strauss, whom we wish to thank sincerely.
† Visiting neuropsychiatrist, Columbus Hospital.

occur. The patient recovered without residuals. This case is unusual in that the patient never exhibited the fall in blood pressure usually seen in barbiturate poisoning.

This case furnishes additional evidence

that picrotoxin is an effective antidote to acute barbiturate poisoning.

1801 State Tower Building

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ANNUAL MEETING OF EYE AND EAR SPECIALISTS

The American Academy of Ophthalmology and Otolaryngology will hold its forty-fifth annual convention in Cleveland, October 6 to 11, with headquarters at the Hotel Cleveland.

The Academy, an organization of more than 2,500 specialists in diseases of the eye, ear, nose, and throat, carries on an active program of education for its members. In addition to scientific papers, an elaborate series of courses is presented at each convention to bring the members up to date in their chosen fields. More than one hundred of these will be offered this year.

In the past year arrangements have been made to extend the teaching activities to young physicians just entering on specialization. Home-study courses are being prepared for any of these young men who wishes to take them, and his work will be supervised by members of the Academy interested in improving the caliber of specialists in practice.

The Cleveland meeting will be noteworthy in several respects.

The Academy will honor Dr. Secord H. Large, Cleveland, who this year completes forty years as comptroller of the organization. Dr. Large as the honor guest of the meeting will receive many special distinctions.

Immediately following the Academy meeting there will be a Pan-American Congress of Ophthalmology, October 11 and 12, which eye specialists from all the Latin-American countries are expected to attend.

Dr. Frank Brawley, Chicago, is president of the Academy, and Dr. Frank R. Spencer, Boulder, Colo., is president-elect. Vice presidents are Dr. Arthur W. Proetz, St. Louis, Dr. Joseph F. Duane, Peoria, Ill., and Dr. Charles T. Porter, Boston. Dr. William P. Wherry, 1500 Medical Arts Building, Omaha, is executive secretary.

SOCIETY FOR THE STUDY OF SYPHILIS

The Society for the Study of Syphilis, cooperating with the Bureau of Social Hygiene of the Department of Health of the City of New York and District No. 1 of the United States Public Health Service, announces special courses for the instruction of physicians in practice and officers of the medical corps, reserve, national guard, and regular army and navy, in the diagnosis and treatment of venereal disease. Special attention will be paid to the public health aspects of patients with infectious venereal diseases. Courses will consist of lectures, lantern-slide demonstrations, and presentation of cases. Morning sessions on Monday, Wednesday, and Friday, beginning at 9:00 A. M., will be devoted to syphilis and venereal granulomas. Afternoon hours beginning at one o'clock on Monday, Wednesday, and Friday will be devoted to gonorrhea.

The teaching staff will be under the direction of Dr. C. C. Pierce, medical director, United States Public Health Service. There will be no registration charge or fee for these courses. Physicians are invited to send their name, address and professional and official affiliations to the Secretary of the Society for the Study of Syphilis, Room 329, 125 Worth Street, New York City. The first course of six weeks' duration will begin September 9.

These courses, offered in cooperation with the Bureau of Social Hygiene, will be in addition to its normal professional educational program. Please write for the current program and statement of facilities at the disposal of the practitioner.

CONSIDER THE PATIENT

Noted western physicians talk of eliminating the involved terminology of medicine and substituting something more understandable — News Item

Pay not the least attention, doc,
To those who raise the question,
And do not take the slightest stock
In any such suggestion.
Nol! Never scrap those swelling terms
Of classic derivation
We have to have important germs
For later conversation.

Ah, let us keep the ologies
And spare, I beg, the itis
Oh, do not call a sneeze a sneeze
Or hint our cold but light is,
But let us prize some sounding name
Which proudly we may mention
To all and sundry as a claim
For adequate attention.

It's quite unfair to minimize,
I think, the woes we suffer
Or shrink a martyr to the size
Of any common duffer
'Twould cause the ego, be assured,
To shrivel and to crumple
Say, what's the fun of being cured,
Good grief, of something simple?

—From *Top O' The Morning* column of George Ryan in the *Boston Herald* where M. M., our sonneteer, found it and sent it to the J. A. M. A.

CERTIFIED MILK—YESTERDAY AND TOMORROW

SAMUEL ADAMS COHEN, M D , New York City

(Member, Milk Commission, Medical Society of the County of New York)

THE story of certified milk typifies the spirit of the American physician and American industry. Born of an inspiration about a half a century ago, certified milk—the brain child of Dr. Henry L. Coit of Newark, New Jersey—came into being in 1893 because he and other physicians interested in public health were painfully impressed with the need for a better grade of milk to help save the lives of thousands of infants. Accordingly, under the active surveillance of the medical profession as represented by the Medical Milk Commissions, certified milk has progressed gradually from the “horse and buggy” age of yesterday through various stages—always “clean, safe, pure, wholesome milk, the best which the knowledge of the times could produce.”

Today certified milk has attained the highest standards of cleanliness and purity, and by virtue of improved methods of milking, transportation, and distribution it is now delivered to the consumer with its freshness, purity, and nutritive value practically intact.

The production of certified milk on its present high standards is a triumph of the Medical Milk Commissions. These commissions, which now number eighty-one, function in all progressive communities in the United States, Canada, and Hawaii. They are composed of physicians and others proficient in carrying into effect the high inspirations embodied in the broad setup of certified milk.

Today, with cleanliness of certified milk a reality, attention is now being focused on increasing still further its present high nutritional value. By carefully planning the feed of the dairy herd, producers acting under supervision of the Medical Milk Commissions have made a

distinct contribution to the nutrition and, therefore, health of the community by producing a milk that has a greater potency of vitamins per unit volume than all other milks. This is particularly true of vitamins A and C which are contained in certified milk in substantially increased amounts.

Yesterday the quality of certified milk was variable due to its dependence on the seasonal variations of the ration of the dairy herd. Today, rigidly controlled feeding of the dairy herd assures a milk of uniform excellence throughout the year. These, and many other precise measures that may be mentioned, merely illustrate the fact that since its inception certified milk has always reflected the most expert and advanced knowledge in the science of the milk industry.

What about certified milk of tomorrow? Considering the purposes, knowledge, experience, equipment, and achievements of certified milk of yesterday and today, what is to be the certified milk of the future?

A clue to the answer is suggested by recognition of the fact that the program of certified milk is so planned and organized that it can readily change its frontiers to embrace advances in science and nutrition, in equipment, machinery and processes, and thus to maintain its superiority over all other milks. Science continues its rapid advances in the discovery of hitherto unknown nutritional ingredients. Industrialization and its concomitant highly specialized equipment are attaining new peaks of efficiency more specifically as these apply to the dairy industry. Electric energy seems destined to be so cheap tomorrow that it will be utilized almost as freely and inexpensively as wa-

Delivered at the Joint Annual Conference of the American Association of Medical Milk Commissions Inc., and Certified Milk Products Association of America, Inc. New York City June 10, 1940

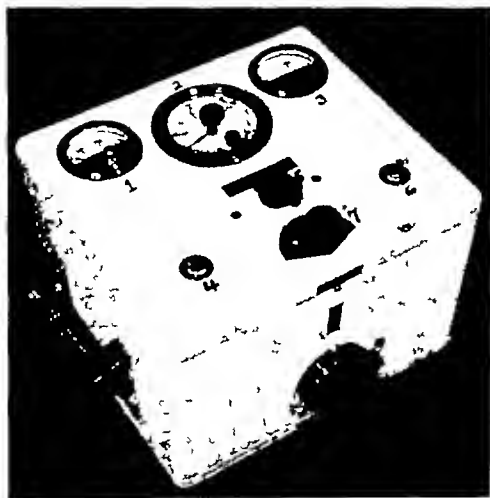


Fig 1

- 1 Milliamperemeter,
- 2 Timer,
- 3 Voltmeter,
- 4 Contact button for shock,
- 5 Change-over switch,
- 6 House current switch,
- 7 Voltage potentiometer,
- 8 Revolving tambour which indicates resistance in ohms of the patient's head

period of a few seconds to about thirty seconds. There is usually a cry, which is followed by a tonic phase lasting about ten seconds. This is followed by a clonic phase lasting from twenty to thirty seconds, at the end of which there is a brief interval of apnea during which the face becomes cyanosed. Usually there is no voidance of urine or feces. The patient now goes into a deep stupor which lasts about five minutes. Then follows a period of confusion which lasts from five to ten minutes, at the end of which time the patient is usually clear, but has no recollection of the treatment. The treatments are given two or three times a week, and a full course consists of thirty sessions. If the patient is going to improve, this will manifest itself usually before the tenth treatment.

Patients who are to be subjected to this treatment are examined psychiatrically, neurologically, and medically. X-rays of the skull, spine, heart, and lungs, and electrocardiogram, electro-encephalogram, blood and urine studies are performed. When these examinations disclose that

the patient is suffering from an organic disease of the cardiovascular system, or the nervous system, he is not given the treatment. Similarly, we do not treat patients over 50 years of age.

In a number of cases we have performed the electro-encephalogram during the fit. The results so far obtained show that electro-encephalographic record is identical with that produced after metrazol injection^{4a, b} with the following exceptions: (1) the electrically induced fit is shorter (thirty to forty-five seconds) than that following metrazol (forty-five to sixty seconds), (2) the electro-encephalogram returned to its preconvulsive pattern usually after forty-five minutes following the metrazol convulsion and less than twenty minutes in those induced electrically, (3) the period of abnormal activity following failure to produce a convulsion was about five minutes with the electrical stimulation and always more than forty-five minutes after metrazol. These findings seem to indicate that there is a milder stimulation of the brain with electricity than with metrazol. The detail results of the electro-encephalographic studies will be described elsewhere.

Using this method we have induced about 100 convulsions and have not had a single complication. Our material has not been large enough, nor has the time elapsed since the beginning of the treatments been sufficiently long to allow us to evaluate properly the results we have obtained so far.

We wish to thank Rev. Mother Enrica, Mother Superior of the Columbus Hospital, for making possible this work by allowing us to use the facilities of the hospital.

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Yesterday there were, necessarily, many inspections and laborious examinations pledging that the label "certified milk" testified to the strict compliance with rigid production standards. This will give way to fewer but even more precise tests to assure the consumer that certified milk is a "clean, safe, pure, wholesome milk, the best which the knowledge of the times could produce."

Although tomorrow fluorescent analysis under ultraviolet light and photoelectric colorimeter will enjoy popularity with some laboratory technicians, the great advance in evaluating the quality of milk will be by means of a specially constructed x-ray spectrograph. This in turn will give place to telecasting (for permanent record). Both of these procedures will be so exhaustive in their analysis as to enable detection of the most minute departures from the high gradation set by the Medical Milk Commissions.

What of the handling, transportation, and delivery of certified milk in the future? Milking, of course, will be mechanized. There will be specially constructed plastic transparent containers to receive the supply of milk. These will automatically register the exact time of milking, will indicate the identity of the milk plant, the nutritional contents of the milk, and other such definite data that will be prescribed by authorized sources. This evaluation will also appraise the pleasant taste and delicate flavor that distinguish certified milk. The rich and attractive color of this milk will also be automatically graduated on the container which will be so constructed that the original freshness, purity, taste, and nutritional contents will be preserved until utilized by the consumer.

Specially equipped planes will drop off

part of their charge of milk over the highest house tops without stopping while en route to less populated communities from five hundred to a thousand miles away. Thus the delivery of this highly nutritious food will be within a few hours after milking.

The containers will be so constructed as to pour out its contents in prescribed amounts just as the adding machine takes care of addition and multiplication. Indeed, one suspects, in the light of current consumer-aid trends, that for those households which do not use synthetic milk, containers will be so arranged that by holding an infant for a fraction of a second before it, its nutritional needs will be ascertained and, accordingly, the container will automatically mix and pour out some of its precious contents for the infant.

Certified milk came into existence yesterday to help prevent unnecessary deaths of infants. Its influence since then has done much to reduce infant mortality. Today certified milk is not only the milk of choice for infants to assure for them a just start in life, but many nutritional experts include it in the daily diets of children of all ages particularly those in their adolescent years. Moreover, many adults today have learned to drink certified milk to supply their nutritional needs. Tomorrow, in addition to being the milk of choice for infants, children, and adults, certified milk will also be the favorite food for the aged because it contains many nutritive properties particularly suitable for them.

This is as it should be, for milk is the original food of the human race and certified milk is destined to be the basis of the diet for all ages because it will incorporate all the nutritional needs of the people of its time.

EXHIBIT—MILITARY MEDICINE

A book exhibit on historical aspects of Military Medicine has opened in the library of The New York Academy of Medicine, 2 E 103rd St New York City. The display begins with one of the earliest records of the treatment of gunshot wounds and continues chronologically up to an account of gas warfare published in 1940.

The exhibit was arranged as part of the American plan of preparedness by the medical profession. Dr Archibald Malloch, Academy Librarian, and the staff arranged for the exhibit. Rare books of the library are included.

The exhibit is open to the public daily from 9 00 A.M. to 5 00 P.M.

ter is today (hence assuring air conditioning as an accepted fact for specially built dairy barns and controlled pastures) The use of television will make it practical for multiple supervision and inspection of the certified dairy herd. Given these, it requires little imagination to predict that certified milk of tomorrow will continue as the standard bearer of all milks—and as the most valuable of all foods.

The possibilities and probabilities of certified milk containing newer nutritional ingredients are boundless. Through the science of chemiculture (soil growth of plants) the certified dairy herd will be rationed on products of the soil which have been cultivated to produce new nutritional ingredients and thereby result in a milk of enhanced nutritive value.

In addition to control of plant evolution—and the reference is to controlling the soil and plant so that these will be independent of the changes of nature—science is making parallel progress in animal evolution. Even now the dream of the ideal dairy herd is approaching realization, for the future gives promise of a new kind of species of dairy herd. In addition to producing more and better milk, the improved certified dairy herd of tomorrow will have a longer and more productive life and will be maintained at less risk and at less cost. This new breed will be developed through conditioned environmental influences together with the application of newer knowledge in the mechanism of animal inheritance.

Animal experimentations and advances in biochemistry are revealing more and more of the secrets pertaining to the functioning and interrelationship of the glands of internal secretions, as well as of the intricate and sensitive mechanism of hormones, enzymes, and, more particularly, in revealing secrets in the field of immunology to enhance our knowledge relative to the occurrence and prevention of diseases.

Tomorrow science will overstep all frontiers of yesterday's knowledge. The milk of the specially conditioned new breed of certified dairy herd will contain selective

nutrients and some biologic unidentified factors which will increase the health and vigor of the human being and improve his growth and development. Perhaps more important, however, will be the immunization of the certified dairy herd against many diseases peculiar to humans. Specific immune bodies, therefore, will be secreted in the certified milk of tomorrow which when consumed will tend to prevent the occurrence of many infections and diseases including, it may reasonably be anticipated, the ubiquitous common cold.

Many hold that a limit is being reached in the possibilities for improving the quality and wholesomeness of a product universally recognized as the almost perfect food. But tomorrow, as yesterday, the spirit of achievement that has always distinguished the Medical Milk Commissions will surely continue to bear its rich fruit.

Certified milk was developed in an age of culture and peace, when men were amazed at the behavior of their ancestors who lived in periods of war and invasion and spent a greater portion of their time and energy in preparing for strife that was always considered inevitable. It was during a period of peace that the Medical Milk Commissions enthusiastically and unanimously endorsed the marketing of a special grade of milk which had already been hailed by scientists as an epoch-making food.

The reference is obviously to the approval of a milk containing an antisenescence factor called, for the time being, Longevity A, which is now adequately contained in this special grade of certified milk. The Medical Milk Commissions further instructed their Public Relation Committees to acquaint all physicians—particularly those proficient in the care and welfare of centenarians—with the virtues and superiority of this special grade of milk, which was produced by feeding the certified dairy herd with a predetermined composed feed containing the hitherto unidentified substance in order to produce in the milk this factor which was able to prolong life.

of heaters of the barrel or drum type, which heated milk to 160 F for fifteen seconds, was widely and secretly adopted by the milk industry. These were called "flash-heaters" because they heated milk in a flash. The heat killed the souring germs and prevented great losses from sour milk. Medical men would not accept such heating as reliable. They called this process "commercial pasteurization"—a term of reproach.

A Practical Laboratory Test

In this cloud of uncertainty the first ray of light came from Dr Ernst J Lederle (Health Commissioner of New York City, 1902-1903, and again in 1910-1913). In the interval between his official services he operated his private laboratory. Here in 1905 he developed simplified and economical methods for making bacterial tests. For the first time he showed the entire milk industry of the city the value of increased its laboratory service, using Dr Lederle's methods. Many laboratories were installed by the industry itself. Through Dr Lederle, medical bacteriology was developed until it was applied, both by the Department of Health and by the industry, to the entire supply of the city.

The Holding Method of Pasteurization

Medical pasteurization in baby bottles was impracticable. "Flash pasteurization" was unreliable. Again Dr Lederle's laboratories responded with a suggestion. "Heat milk with flash-heaters and then run hot milk into tanks and hold it half an hour." With this thought the "holding method" of pasteurization was born. Dr Lederle's laboratories invited all manufacturers to consider it in 1906. In 1907 a manufacturer (Joseph Willmann) came forward with a design of a machine through which milk could flow continuously with a guarantee that every particle of milk would be heated to 145 F and held at that temperature for half an hour. One company in New York was the first to install this equipment. Others quickly followed. All American cities and many foreign cities sent delegations to view this new process. The success was enormous. The apparatus was tested with milk inoculated with disease germs. The test was successful. Medical pasteurization had become commercialized. The pasteurization label was no longer a mark of disgrace but a badge of honor.

The New York Milk Committee and Infant Milk Depots

In 1906 a new group arose among charitable organizations and social workers. The New York Association for Improving the Condition of the Poor had opportunities for observing the sickness and death of infants and children in the poorest parts of the city—those who were using the cheapest and most unsanitary milk. They appointed a New York Milk Committee, which in its membership included the names of many of the city's leading citizens. It was announced that the objects of this Committee were The Reduction of Infant Mortality and the Improvement of the Milk Supply. This Committee formed an immediate alliance with the

sanitary school of medicine. For milk they accepted "rawness" as a special virtue and sanitation as the only remedy for milk contamination. To prove this they installed and operated three infant milk depots (1907-1908) where they dispensed Certified milk to about 1,000 infants. Medically this experiment was a great success. The sickness and mortality of the infants compared favorably with breast-fed infants (less than 35 per 1,000) compared with the mortality of 110 per 1,000 for the city. But financially the experiment was a failure. It was not a real remedy to buy Certified milk at twenty cents per quart and sell it to the poor at eight cents per quart.

Sanitary Milk on a Commercial Scale

The real problem had not been solved. How could sanitary milk be produced economically on a commercial scale? I am compelled to enter the picture at this point. As a member of the Committee I was familiar with its program and proposed that the production of sanitary milk be organized, that a selection of a dairy district containing hundreds of dairy farms be made and that a sanitary milk-receiving station be erected equipped for bottling milk and also with a laboratory for making bacterial tests of the milk from each dairy farm. Each dairyman would be instructed regarding sanitary equipment and methods. The weekly tests by the laboratory on his milk would be reported to each dairyman each week. There would be premiums paid in addition to the regular market price for milk found to be within fixed bacterial standards.

"The New York Dairy Demonstration Company"

The New York Milk Committee accepted this proposal. They (through their secretary, Wilbur C Phillips) raised the \$25,000 needed for the purchase and equipment of the country milk-receiving station. Under the title New York Dairy Demonstration Company, a corporation to carry on this work was launched. I volunteered my services as director. A building was equipped at Homer New York, in 1910 and began operations in the fall of that year. By the summer of 1911 there were seventy-one dairy farmers bringing over 10,000 quarts daily to the station. This was bottled and shipped to the city. The milk was distributed through thirty-one infant milk depots feeding 10,000 babies daily. The next year (1912) there were 150 dairy farmers patronizing this station producing more than 20,000 quarts of milk daily which was distributed through sixty-five infant milk depots in the city. The condition of this milk was astonishing. Ninety per cent of the producers brought milk to this station testing less than 10,000 bacteria per cubic centimeter in the station laboratory. Bottles taken at the city infant milk depots also tested less than 10,000. This was raw milk.

Critics Investigate Homer

This wholesale application of sanitary technique to a large group of dairy farms was viewed with doubt by the New York City Department of Health and by dairy scientists. The laboratory tests were questionable. The Department of Health requested Dr William H Park to make

Special Article

NEW YORK CITY MILK

CHARLES E. NORTH, M.D., New York City

THERE is a direct relationship between medicine and the milk supply of cities. Standards of food value, sanitation, and safety of milk are medical standards. The changes in standards now proposed by our Board of Health are, therefore, of particular interest to every physician in the city at this present time.

Two Schools of Thought

All physicians know that nature provides milk free from external contaminations as a special food for the young. The great growth of medical bacteriology in the Eighties and the decline of breast feeding compelled attention to the protection of cow's milk for artificially fed infants. Two schools of thought arose at the same time, about 1892—the sanitary school and the pasteurizing school.

The Sanitary School

The point of departure of the sanitary school was that nature produced milk in a raw state and that therefore there was great virtue in rawness. Vitamins, hormones, and enzymes were unknown. But "vital factors" were mentioned as important ingredients of raw milk. There were many distinguished leaders of this school. Rotch, of Boston, originated laboratories for "modified milk" and special sanitary dairies as the sources of supply in 1902. Coit, of Newark, New Jersey, originated Certified milk and started the movement that resulted in the organization in 1903 of medical milk commissions to supervise Certified milk for every large city of this country. This sanitary school of physicians applied the equipment and methods of the surgical operating room to dairy farms. This cost was so prohibitive that in city markets the volume sold has rarely exceeded one-half of 1 per cent of the total supply. But while the volume has been small, the influence of Certified milk and medical milk commissions has been enormous. They have established the principles on which all sanitation in the milk industry is based. They were the originators of bacterial standards for milk.

The Pasteurizing School

The pasteurizing school took as their starting point the need of safe milk for all infants and children. While recognizing the value of sanitation, they argued that its practice was impossible for the bulk of city milk supplies. Contaminations could not be prevented without too great expense. Pasteurization was a remedy for all contaminations. The pioneers, Soxhlet and Jacoby (1887), advised heating to the boiling point. Later, Freeman, Koplik, and others (1892) advised heating to only 160 F. for twenty minutes. Later on, the temperature advocated was even lower. All of this heating was done in

baby bottles in the home in various types of hot-water heaters. For fifteen years (1892-1907) Nathan Straus conducted a campaign in this city and in many other large cities for the feeding of infants from infant milk stations on modified milk heated in baby bottles. This method of heating had little effect on the bulk of the city's supply. But the results were an object lesson of the greatest value because of the principle established.

Medical Bacteriology

Until 1905, milk to be tested for bacteria had to be taken to a medical college. Medical laboratories tested milk only occasionally as a scientific curiosity. Boston, New York, Philadelphia, Baltimore, and other large cities had no bacterial standards for milk and no staff of bacteriologists to make regular tests on the city supply. The milk industry had no laboratories of its own. There were no standard methods. Such service could not be applied to the thousands of dairy farms and hundreds of stations of the milk industry. But the work of the medical bacteriologists established important principles. It proved that clean milk contains very few bacteria while unclean milk contains very many. It also proved that a pasteurizer that is properly designed and operated will kill more than 99 per cent of the bacteria in milk.

Medical Principles Put in Practice

Medical sanitation of Certified milk was correct in principle but was not a practical remedy for city milk contaminations. Medical pasteurization with its heating in baby bottles could not be adopted for the entire city supply. Medical bacteriology with its methods and costs was prohibitive as a means of testing the great supply of milk for the city or for the industry. Some way must be found to put these medical principles into practical use on a large scale.

Pressure for Action

The numerous outbreaks of typhoid, diphtheria, scarlet fever, septic sore throat, and scrofula traced to raw milk and the high infant mortality, especially during the hot months, made it imperative that some way should be found to apply these medical principles to the city's supply as soon as possible. The investigation of the Rockefeller Institute (1902-1903) showed unclean milk to be a cause of infant mortality. A mayor's commission reported in 1907 that "there should be more country milk inspectors and that the milk should be pasteurized when necessary."

Flash Pasteurization

Meantime, most of the city's milk as received contained many millions of bacteria. The use

- 4 Hurty J N (M D), State Health Officer Indianapolis
- 5 Neff J S (M D) formerly Health Officer Philadelphia
- 6 Fulton J S (M D) State Health Officer, Baltimore
- 7 Woodward W C (M D) Health Officer Washington, D C
- 8 Hastings C J (M D) Health Officer Toronto, Canada
- 9 Landis J H. (M D) Health Officer Cincinnati

CHEMISTS

- 1 Sherman H C. Professor of Chemistry, Columbia University, New York City
- 2 Van Slyke, L L. Department of Chemistry New York Agriculture Experiment Station, Geneva, N Y
- 3 Alsberg C L (M D) Chief Bureau Chemistry, U S Department of Agriculture
- 4 McCollum, E. V., Professor School of Hygiene and Public Health Johns Hopkins University

DAIRY EXPERTS

- 1 Melvin A D Chief Bureau Animal Industry U S Department of Agriculture
- 2 Pearson R A. Commissioner of Agriculture New York State Albany N Y
- 3 Mohler J R, Chief Bureau Animal Industry U S Department of Agriculture

To summarize we here have ten bacteriologists, nine health officers four chemists, and three dairy experts. Of these there were fourteen physicians and six men actively connected with supervision of Certified milk.

Over a period of ten years (1911-1920) these men met fourteen times. Seven meetings were held at The New York Academy of Medicine. Others were held at Homer, New York, Chicago, Richmond, Va., Colorado Springs, and Washington, D C. Hearings and conferences took place with the milk industry and with the Committee on Definitions and Standards of the United States Department of Agriculture. Four printed reports in 1912, 1913, 1917, and 1921 were published by the United States Public Health Service giving the results of the work of this Commission. Its subcommittees studied every phase of the city milk problem and its reports represent the best opinions of the leading authorities in the United States.

A few outstanding abstracts from their extensive reports have a direct bearing on our present-day problems.

Appointment

The appointment of this Commission was the direct result of the observation of the New York Milk Committee that there was great incompleteness and lack of uniformity in the milk standards, milk ordinances, and rules and regulations of public health authorities throughout the country for the control of public milk supplies.

Laboratory Examinations of Milk for Bacteria

The Commission passed these resolutions:

- 1 That the interests of public health demand that the control of milk supplies both as to production and distribution shall include regular laboratory examinations of milk by bacteriologic methods

2 That among present available routine laboratory methods for determining the sanitary quality of milk the bacteria count occupies first place.

3 That bacteriologic standards should be a factor in classifying or grading milks of different degrees by excellence.

Bacteria and Infant Mortality

"The Commission believes that the numbers of bacteria in milk have a relation to infant mortality for the following reasons:

"(a) Evidence furnished by clinical observations of groups of children fed on milk containing small numbers of bacteria and large numbers of bacteria show a higher death rate in the latter than in the former.

"(b) In general, a reduction in infant mortality in cities results from a substitution of milk containing small numbers of bacteria for milk containing large numbers of bacteria.

"(c) Bacteria causing no specific intestinal infection in adults may cause infant diarrhea and milk containing large numbers of bacteria, more often contains species capable of setting up intestinal inflammation in infants than milk containing small numbers of bacteria."

Interpretation of Bacterial Tests

The Commission has put its opinion on this subject in the form of resolutions, as follows:

"WHEREAS, The milk consumer is justified in demanding that milk should be clean, fresh and cold in addition to having the element of safety, and

"WHEREAS, Milk that is from healthy cows and is clean, fresh, and that has been kept cold will always have a low bacterial count, and

WHEREAS, Milk that is dirty, stale, or has been left warm will have a high bacterial count—therefore it is resolved

First, that the health officer is justified in using the bacterial count as an indicator of the degree of care exercised by the producer and dealer in securing milk from healthy cows and in keeping the same clean, fresh, and cold, and

"Second, that the health officer is justified in condemning milk with a high bacterial count as being either unhealthy or decomposed or containing dirt, filth, or the decomposed material as a result of the multiplication of bacteria due to age and temperature.

Third, that the health officer is justified in ruling that large numbers of bacteria are a source of possible danger, and that milk containing large numbers of bacteria is to be classed as unwholesome, unless it can be shown that the bacteria present are of a harmless type, as, for example, the lactic acid bacteria in buttermilk or other especially soured milks."

The Classification of Milks

There is no escape from the conclusion that milk must be graded and sold on grade, just as wheat, corn, cotton, beef, and other products are graded. The milk merchant must judge of the food value and also of the sanitary character of the commodity in which he deals. The high grade product must get a better price the low-grade product must bring less."

an investigation. Thus he did by the installation of a field laboratory which operated during hot weather for two months (July and August). His tests confirmed in every way that simple sanitary technic on any dairy farm produces milk with less than 10,000 bacteria per cubic centimeter and often only a few hundred.

An Epidemic of Diphtheria

It was a great shock to all physicians and nurses of the infant milk depots to learn that an epidemic of diphtheria had broken out in the village of Homer and that children on three of the dairy farms were infected. The 20,000 babies of the infant milk depots were in danger. There was no other milk available. It would be a serious thing to change from raw to pasteurized milk. It would upset the digestion of many infants. But in this emergency pasteurization must be done.

Sudden Change to Pasteurized Milk

The order was given, and the staff of doctors and nurses prepared for the great change from raw to pasteurized milk. Fortunately, a pasteurizing machine had been installed when the station was built. It was operated immediately when the diphtheria outbreak was reported. At Homer the milk had been pasteurized for five days before the order to do so was given by the city doctors. Twenty thousand infants had been changed from raw milk to pasteurized milk without any disturbance sufficient to arouse the attention of any of the doctors or nurses. The indignation of the staff at this hasty action was more than neutralized by the sense of security against diphtheria infection given by the pasteurizing process. As the diphtheria outbreak subsided the operators of the Homer station offered to shut down the pasteurizer and resume shipments of raw milk. But the doctors and nurses were now satisfied that pasteurized milk was a good food for infants and refused any longer to take the risk of raw milk.

Pasteurization Became Permanent

The conversion of this entire medical and nursing staff of sixty-five physicians and 130 nurses to the value of pasteurization was no small event. It gave great satisfaction to the school of physicians who were advocates of pasteurization. But its influence was much more far reaching. This event represented the turning point in professional opinion and public sentiment in New York City regarding the desirability of pasteurization as a safeguard for all milk. Chicago had been the first of all American cities to make pasteurization mandatory in 1908. New York City made it mandatory in 1912 (for all milk except Certified).

New York Milk Committee Demonstrates Two Principles

Through its infant milk depots, the Committee had proved that clean milk reduces infant mortality. The Committee concluded that sanitation and pasteurization both made milk safe independently of each other. If combined, they would give milk a double protection. For infants, therefore, the Committee recommended that milk should first be clean and then should be pasteurized.

A second principle was fully demonstrated by the Homer milk station. This was that clean milk can be produced in large volume under commercial conditions on a large group of dairy farms by the use of a simple sanitary technic, checked by frequent laboratory tests for bacteria and stimulated by bonus payments to the producer for milk coming within fixed and small bacterial standards.

National Commission on Milk Standards

Poor children of the Bowery were now getting cleaner milk than children on Fifth Avenue. The next step must be to get the city authorities and the milk industry to recognize the facts demonstrated by the Committee's experiments. Such recognition to be effective must take legal form. In short, the milk laws of New York City must be rewritten.

The writing of milk laws was not to be entrusted to amateurs. For a city the size of New York, such work demanded the talents of the highest national authorities. Milk laws for New York could be a model for all other cities. Therefore, the best talent available should be assembled for this task. Over two hundred names were considered. From these, twenty were selected. These men were invited to serve as members of a National Milk Commission. At the expense of the New York Milk Committee for carfares and hotel bills but with no compensation for their services, this Commission assembled for their first meeting at The Academy of Medicine in New York City, in April, 1911. Since this is the most important group of experts ever appointed to deliberate on milk laws, it is fitting that their names and position be set down.

NATIONAL COMMISSION ON MILK STANDARDS

(Appointed by New York Milk Committee, 1911)

BACTERIOLOGISTS

- 1 Arms B L (B.S.) Director of Laboratories Department of Health Boston
- 2 Anderson J F (M.D.) Director of Hygienic Laboratory U S Public Health Service.
- 3 Conn H W Professor of Biology, Wesleyan University Middletown Conn
- 4 Park W H (M.D.) Director of Laboratories New York City Department of Health
- 5 Ravenel M D (M.D.) Director of Hygienic Laboratory University of Wisconsin
- 6 Rosensau M J (M.D.) Director of Department of Hygiene and Preventive Medicine Harvard University
- 7 North C E (M.D.) formerly Director of Bacteriology Lederle Laboratories
- 8 Stewart A H (M.D.) Antitoxin Laboratories Department of Health Philadelphia
- 9 Stokes W R (M.D.) Bacteriologist State and City Health Department Baltimore
- 10 Stocking W A Professor of Bacteriology Department Dairy Industry Cornell University

HEALTH OFFICERS

- 1 Evans W A. (M.D.) Professor of Preventive Medicine Northwestern University formerly Health Commissioner Chicago
- 2 Levy E C. (M.D.) Health Officer Richmond Va.
- 3 Wells C. H. (B.S.) Health Officer Montclair N J

Largest Supply of Clean Milk in World

From the single milk station at Homer in 1911, with 10,000 quarts of milk daily, this Grade A business has grown to forty-seven stations producing 918,167 quarts daily. This is the largest supply of clean milk the world has ever seen. No other large city can match this supply in quantity or in purity. Over 100,000 cows from which it comes are so closely supervised by skilled veterinarians that mastitis is suppressed to less than 2 per cent compared with 10 to 40 per cent in uncontrolled herds. On 4,371 dairy farms sanitary technic is practiced so faithfully that the milk delivered to the country receiving stations closely resembles Certified in purity. The nineteen laboratories testing milk from each dairy farm nine times each month guide the inspectors and veterinarians by their reports and furnish the figures on which the payment of bonuses to each producer is based.

A Great Sanitary Reform

This improvement in New York City milk was the greatest sanitary reform that had ever occurred in the history of food production. The grading system had demonstrated its efficiency. Sanitation had become a commodity and had its own market value. Cleanliness was purchasable. These principles gave New York a position of leadership over all other cities of the world in the purity of its milk supply. Delegations not only from the principal American cities but from many foreign countries visited New York to study its milk laws and inspect its milk supply. They discovered that quality and price progressed hand in hand and that producers, consumers, and milk distributors all recognized that price levels depended on quality levels and that quality levels included sanitation.

Eight Administrations Encourage Growth

The records show that the New York Milk Committee and the National Commission on Milk Standards started this movement to recognize sanitation and bacterial standards. Under the administration of eight mayors and nine health officials, the production and sale of clean milk under the Grade A label was encouraged. Under Commissioner Lederle the first grading law was adopted. Under Commissioner Goldwater the laboratory technic was made efficient and the milk-testing laboratory enlarged to make tests sufficient to check on milk before and after pasteurization. Under Commissioner Emerson a cost survey of the entire city supply was made, and the Department of Sanitary Inspection of Milk was enlarged. Under Commissioners Copeland and Wynne the milk law was revised and improved, and the production and sale of Grade A milk was stimulated until the volume approached one-third of the city supply.

City Supply Ideal

After thirty years of trial and experience the conclusion of all far-minded and qualified observers is that New York City possessed an ideal milk supply. Its best grade of milk labeled "Grade A" was produced with special sanitary care on dairy farms supervised by a skilled staff of veterinarians, inspectors and laboratory workers, and with the cooperation of producers

insured by the payment of a bonus. The bacterial standards were a guarantee of the purity of this milk. It was a milk suitable for infant feeding and as a beverage. The extra care made an extra charge of three cents per quart necessary. Consumers were educated to understand that this three cents paid for sanitation on the farm and a separate bottling plant for this special milk. Grade B milk or second-grade milk amounting to two-thirds of the supply was produced on dairy farms conforming to Department of Health requirements in appearance. The producers on these farms were offered no special inducement to practice any sanitary technic beyond the general impulse to keep their milk in a condition where it would be salable at the regular market price. Such milk would at times contain several hundreds of thousands of bacteria before pasteurization. Pasteurization would make such milk safe. Such milk could be bought and sold at the lowest market price. In common with all other merchandise it was entirely proper for the city to have on the market different grades of milk at different prices.

City Takes Charge of Infant Milk Depots

In 1912 the infant milk depots of the New York Milk Committee were transferred to the Bureau of Child Hygiene of the City Department of Health. The names were changed to "Baby Health Stations." The milk supply remained the same. Under the auspices of the city, the number of stations was multiplied to eighty-five, dispensing milk in 1933 to 50,000 babies daily. All of the milk continued to come from the original Homer milk station for twenty-three years until the demand exceeded the supply and another Grade A milk station was added as a source. Sixty per cent of the mothers who patronized these stations in the poor parts of the city did not speak English. All of them were taught by the doctors and nurses that the Grade A label meant clean milk for babies. Every mother in the city learned that Grade A was a symbol of clean milk and that this milk was for infants. For over twenty-five years in the city law itself the milk was defined as "Grade A milk for infants and children." More than thirty years of education by doctors, nurses, and social workers taught New York mothers to use Grade A milk for infant feeding because of its purity. It was recognized as the "poor man's Certified milk."

New Administration Puts Grade B Milk in Baby Health Stations

One of the first acts of the present administration in 1934 was to substitute Grade B for Grade A milk in the Baby Health Stations and to advise mothers to feed babies on Grade B milk. Over 50,000 babies were being fed on milk from these stations at this time. On the day after this change was made thousands of mothers refused to buy Grade B milk from the stations and bought Grade A milk for their babies at the highest retail prices. By this act Grade A at a reasonable store price was no longer available to poor mothers. Two generations of teaching caused many to continue the purchase of Grade A milk at the full retail price charged by retail wagons and delicatessen stores, since Grade A milk is available in only a few grocery stores.

TABLE 1—GRADE A MILK STATISTICS FOR METROPOLITAN NEW YORK (1938-1939)

Producers	4 371
Producers extra investment in building equipment, refrigeration and better cows	\$6 556 500
Quarts of Grade A milk produced daily	918 167
Bonus payments to producers yearly	\$2 499,468
Country receiving stations	47
Country bottling plants	5
City bottling plants	6
Laboratories (country)	15
Laboratories (city)	4
Laboratory workers	41
Laboratory tests for bacteria (yearly)	460 526
Producers' milk testing below 25 000 bacteria per cubic centimeter	90%
Producers' milk testing below 10 000 bacteria per cubic centimeter	80%
Yearly average bacteria in mixed raw milk (all tests)	39 000
Yearly average pasteurized milk in bottles delivered (all tests)	1,700
Veterinarians (chiefly to suppress mastitis)	25
Milk inspectors (to teach sanitation)	41

A Guide to Health Officers in the Establishment of Grades

"The grading of milk has necessarily been based on its sanitary character primarily as determined by the bacterial test."

"No matter how excellent the general supply of a community, it is not all of a single standard of excellence, hence there are actually different grades of milk in every community, and the recognition of such grades is always advantageous."

Financial Stimulus

"This factor underlies all others. Unless the dairyman can be convinced that it is to his financial advantage to produce clean milk, any attempt to purify milk by legal statutes will be largely futile. To produce such a financial stimulus some form of grading milk is necessary in which the public will have confidence as being thoroughly reliable."

Classification of 1914

A preliminary classification of milk was adopted by this Commission in 1911, as follows: Class A, Certified milk or its equivalent, Class B, inspected milk (raw), Class C, pasteurized milk, Class D, milk not suitable for drinking purposes. This classification was abandoned and a new classification agreed upon at the Commission's meeting in Richmond, Va., in 1913. The Department of Health of New York City worked in closest harmony with this Commission. It adopted the preliminary classification of milk in 1912 and changed this to the final form recommended by the Commission in 1914. This classification in brief follows:

	Bacteria per Cubic Centimeter
1 Grade A (raw)	Not to exceed 100 000
2 Grade A, pasteurized (before pasteurization)	Not to exceed 100 000
(after pasteurization)	Not to exceed 200 000
3 Grade B, pasteurized (before pasteurization)	Not to exceed 1 000 000
(after pasteurization)	Not to exceed 500 000
4 Grade C pasteurized (before pasteurization)	In excess of 1 000 000
(after pasteurization)	Not to exceed 50 000

Bitter Controversy

The last three years (1911-1914) were full of the bitterest controversy. The appointment of

the Commission on Milk Standards awakened the milk industry to the fact that a national movement had been started to classify milk. The Commission's work year by year made it clear that sanitation, laboratory testing, and bacterial standards would be required. The industry fought bitterly against this. Through local and national industrial organizations, lawyers and scientific and medical experts were employed to oppose the Commission on Milk Standards. The basis of the industry's case was that sanitation, laboratory testing, and bacterial standards were not necessary for city milk and should not be recognized by law. Pasteurization was a cure-all and sufficient protection. Therefore there should be no sanitary standards and no bacterial standards for raw milk.

New York City Adopts Milk Grades

The Commission and the Department of Health were both familiar with the results of the work at the Homer milk station and knew that a simple and inexpensive sanitary technique would keep bacteria out of milk, but they also knew that sanitation on dairy farms and in milk plants was a novelty to most milk dealers. They also knew that laboratory tests and bacterial standards were novelties to all. At times there were still millions of bacteria in New York milk. Because of these things, the adoption of ideal standards was impossible. Standards had to be most liberal to secure the cooperation of the industry. Therefore, although Homer dairy men were producing milk under 10,000 bacteria per cubic centimeter, the standard for Grade A raw milk was 200,000. Also, while Homer pasteurized milk was testing 200 bacteria per cubic centimeter, the standard for Grade A pasteurized milk was made 30,000. Much more liberal standards were adopted for Grade B and Grade C milks. These liberal standards were adopted in 1914 and the City of New York was launched on its program of milk improvement.

Milk Industry Installs Laboratories

While the standards were far too liberal, the principles were correct. As an immediate result, the milk industry of New York installed laboratories for bacterial testing of milk, both in the country and city. A staff of veterinarians was employed to examine cows, especially for mastitis. A staff of milk inspectors in the employ of the industry instructed dairy farmers how to install sanitary equipment and practice sanitary technique. Laboratory workers tested milk from each dairy farm nine times each month and reported the results to each producer. Bonuses or premiums were paid for milk coming within fixed bacterial standards.

Whenever it was installed, this system of control worked wonders. It quickly eliminated dirt and bacteria from milk of hundreds and later thousands of dairy farms. It showed everywhere that legal standards were far too liberal and that milk testing under 10,000 bacteria per cubic centimeter could be produced anywhere that the simple sanitary technique was practiced.

The volume of this clean milk grew rapidly from 1914 to 1940. The statistics for the year (1938-1939) are shown in Table 1.

other auspices and label are found. To provide this, members of the Committee on Public Health Relations of The Academy of Medicine invited the Medical Milk Commission of New York County and of Kings County to consider organization of a joint commission to offer sponsorship and supervision for a superior sanitary milk. After conferences it was agreed that a Medical Milk Association be organized which would be unofficial but representative because of the character of the members who volunteered their services.

Medical Milk Association

This plan has been perfected. "The Medical Milk Association of Metropolitan New York" has been incorporated. Its object is to furnish supervision and sponsorship of a superior sanitary milk corresponding in character to the Grade A milk which has been on this market for twenty-six years. There are seven prominent physicians who have agreed to act as members of this Association.

New standards and specifications have been prepared which correctly define the real character of this milk. The minimum bacterial standards are as follows

	Bacteria per Cubic Centi- meter Not More Than
1 Raw milk delivered by dairy farmers to country receiving stations	10,000
2 Mixed raw milk to be pasteurized in country bottling plants	25,000
3 Mixed raw milk to be pasteurized in city bottling plants	50,000
4 Pasteurized milk bottled and delivered to the consumer	5,000

The present Grade A supply can qualify for these standards. Therefore this proposal is based on a continuation of the cooperation of the producers and dealers and staff of experts and laboratories which have been engaged for past years in the production and supervision of Grade A milk.

A suitable emblem or trademark has been designed continuing the use of the capital 'A' and indicating the auspices of the Medical Milk Association of Metropolitan New York, Inc. This has been submitted to the Department of Health for its approval and when approved the cooperation of the milk industry in placing milk on the market under this emblem will be invited.

PREVENTION AND TREATMENT OF TETANUS IN THE WAR

For the prevention and treatment of tetanus in the British army, both passive and active immunization are in use for every man. Passive immunization is produced by injecting a prophylactic dose of antitoxin as soon as possible after the man has been wounded, active immunization by two injections of formal toxoid sometime before going on active service. The value of passive immunization was shown in the last war. The few who developed the disease after prophylactic injection usually had a long incubation period and slow onset and recovered

The Position of the City

Under our former milk law this city occupied a position of world leadership. The system of milk control was the most efficient and economical of any city in the world. The checking of dealers' milk by the Health Department compelled the employment by the industry of its own expert staff of veterinarians, inspectors, and laboratory workers to keep milk within bacterial standards. The Grade A label which originated in New York has been adopted by all cities in the United States and by many in foreign countries as a symbol of purity.

Under the new law, New York leadership will be lost. It will be the only large city without any Grade A milk. Its great volume of Grade A milk will revert to the common level. A standard of 400,000 bacteria per cubic centimeter is so liberal it means the abandonment of efforts to suppress mastitis or control sanitation. Without the payment of costs, the staff of experts employed by the industry must be radically reduced. Without the payment of bonuses, dairy farmers will have no inducement to practice sanitary technique. Without the great surplus of Grade A milk and the help of its experts the bulk of the supply will be worse instead of better. A standard of 400,000 bacteria for the entire supply means more bacteria in New York milk than in the milk of any other large city. New York's position of leadership will be lost. It will be the only city without any sanitary milk at a price within reach of the masses of the people.

Support Medical Supervision

The medical demand for sanitary milk is accompanied by a large consumer demand. The industry is reluctant to abandon traditions and principles of quality control which represent many years of conscientious effort. The medical nature of milk sanitation and its history makes it entirely proper that the initiative for the movement to keep sanitary milk on the market should come from medical men themselves. The support of medical men seems certain if the facts are placed before them. The reason for this important effort to present a few of the more important facts connected with the development of this city's supply by one who has devoted the greater part of his life to its improvement. These facts are presented in the hope that the movement to keep a sanitary milk on this market will receive the support of all of the medical men of this city.

23 East 26th Street

The disadvantages of this treatment are that the injection has to be given soon after the wound is received, in some cases it has to be repeated and serum reactions are liable to occur. Active immunization has the advantages that it can be produced before the soldier goes on active service and that the immunization probably lasts many years. But it has not yet been tested on a large scale in war. The only disadvantage is slight allergic reactions, which are attributed to a small amount of peptone present.

—London letter J.A.M.A.

The New Milk Law

The Board of Health of this city adopted a new milk law in May, 1940, to become effective September 1. This abolishes the present grades A and B and substitutes a single grade to be known as "Approved Milk." No other milk is to be officially recognized by the Board of Health with the exception of Certified, which in volume is three-tenths of 1 per cent of the total supply. The standards for this "Approved Milk" are bacteria in raw milk bottled in the country 150,000 per cubic centimeter, bottled in the city 400,000 per cubic centimeter, after pasteurization 30,000 per cubic centimeter, butterfat not less than 3.5 per cent, total solids not less than 11.6 per cent. Compared with the milk standards of the past, the Board of Health considers these new standards a step in advance. Briefly tabulated the comparison is

Bacterial Standards

	Grade A	Grade B	New Approved
Raw country	100,000	300,000	150,000
Raw city	200,000	750,000	400,000
Pasteurized	30,000	50,000	30,000

From this it appears that the new law establishes standards for raw milk better than the old Grade B but inferior to the old Grade A. For pasteurized milk the new law establishes 30,000 bacteria per cubic centimeter, which is the same as the old Grade A standards. It is on this point that the advocates of the new law lay the greatest emphasis. It is on this that they base their claim that the new law provides a milk for the city that is similar to Grade A in character. This claim entirely overlooks the vast differences between the laws and the milks. The great volume of one million quarts of Grade A milk testing less than 30,000 in a raw state and less than 2,000 after pasteurization is ignored.

Medical Opinion

The condition of city milk has been a topic of discussion by the Committee on Public Health Relations of The New York Academy of Medicine for more than three years. The contemplated changes in the city milk law have been fully considered. Many hearings have been held and the conclusions have been expressed in a number of ways. All of these have opposed any change that would lower city standards for milk. If only one grade is to be legalized the standards should be the equivalent of Grade A standards. A milk of superior sanitary character such as Grade A possesses should be kept on the city market. This is the best medical opinion.

Dr. Carr's Report

The special survey made by Dr. Walter Lester Carr, Dr. William H. Park, and associates was approved by the Executive Committee of the Committee on Public Health Relations of The New York Academy of Medicine. This report covered inspections of dairy farms and laboratory tests of Grade A and Grade B milks in July, August, September, and December, 1937, January and February, 1938. Three hundred and ninety-seven Grade A dairies and 488 Grade B dairies were inspected in detail and many dif-

ferences noted. Many laboratory tests for bacteria were made. The report is voluminous and represents a thorough survey of the sanitary condition of Grade A and Grade B milks. Only the briefest conclusions can be cited here. The general conclusion of the inspectors of dairy farms was as follows: "The stables on the farms producing Grade A milk were, as a rule, larger, had better light and were kept cleaner than those on the farms producing Grade B milk. It is apparent that there is a very great difference in the average between conditions on the Grade A and Grade B farms."

The bacterial counts of milk samples taken from dealers' storage tanks are of special significance because this is the mixed raw milk of many dairy farms which is to be pasteurized and bottled. The averages of hundreds of tests are shown in the tabulation below.

	Bacteria in Milk in Dealers' Storage Tanks		
	Grade A	Grade B	
Year 1937			
July, Aug., Sept.	112,949	710,580	Raw
Year 1938			
Dec., Jan., Feb.	31,950	136,290	Raw
July, Aug., Sept.	982	9,848	Pasteurized
Dec., Jan., Feb.	815	7,376	Pasteurized

Bacteria Surviving Pasteurization

The Dr. Carr report and other reports confirm medical teachings. All bacteria are not killed by pasteurization. If we assume that there are no intermissions, or breakdowns, or variations, but always perfect operation, at best there are bacteria which survive. Tuberculosis, diphtheria, typhoid, dysentery, scarlet fever, septic sore throat, undulant fever, are caused by bacteria that are killed by pasteurization. Some streptococci and staphylococci are not killed. All spore formers survive. A number of thermophilic and thermoduric species survive. Many of these feed on milk compounds. Many produce their products in milk. The B. welchii is a common species-forming spore found in cow manure. There are records of diarrhea in children caused by this species. In old milk this spore former produces toxins sufficient to kill guinea pigs. There are many intestinal disturbances of infants which are not reported. The only remedy for contaminations of milk with organisms that survive pasteurization is sanitation at the sources of supply and sanitation at all points of transit. Sanitary milk is safer than unsanitary milk after both are pasteurized.

Medical Action

There is substantial evidence not only of a strong medical demand for sanitary milk but of a strong consumer demand. The fact that before the present agitation consumers were purchasing more than 400,000 quarts of Grade A milk daily and that the child population of the metropolitan area under five years of age is about 500,000 is evidence that the majority of mothers in this city prefer to buy a superior sanitary milk for their children. While the law no longer recognizes such milk there is nothing in the law that prohibits the marketing of a cleaner milk. The difficulty now is the problem of identification. Since the Department of Health no longer provides auspices or a label, a superior milk cannot be marketed unless some

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Sixth District Branch

Thursday, September 19, 1940

Willard Straight Hall, Cornell University, Ithaca, New York

Morning Session 10 00 o'clock—Daylight Saving Time

"Recent Progress in Thoracic Surgery"

J. Maxwell Chamberlain, M D,
Homer Folks Hospital, Oneonta, N Y
 Discussion by R. J. Erickson, M D, Albany
associate professor of medicine, Albany Medical College

"The Clinical Use of Ovarian Sex Hormones"

Benjamin P. Watson, M D, New York City
professor of obstetrics and gynecology, Columbia University, College of Physicians and Surgeons
 Discussion by Claude E. Chapin, M D, Cortland, N Y

"The Clinical Use of the Sulfonamide Drugs"

Colin M. MacLeod, M D, New York City
Hospital of the Rockefeller Institute
 Discussion by Norman S. Moore, M D, Ithaca, N Y

Brief Comments by Exhibitors

Luncheon and Introduction of Guests

Afternoon Session 2 15 o'clock

Business Meeting

"The Psychoneuroses"

Thomas Rennie, M D, Baltimore
associate in psychiatry, School of Medicine of the Johns Hopkins University
 Discussion by Waldemar Boldt, M D, Binghamton, N Y

"Sudden and Unexpected Deaths from Natural Causes"

Thomas A. Gonzales, M D
chief medical examiner of the City of New York
 Discussion by Floyd S. Winslow, M D, Rochester, N Y

Entertainment for Ladies

Ladies will be entertained at luncheon at the Taughannock Farms

Exhibits

- 1 The Diagnostic Value of Photographs of the Interior of the Eye
 Arthur J. Bedell, M D, Albany, N Y
- 2 Salivary Reflexes in Students in the Civilian Pilot Training Corps at Cornell University
 Richard Parmenter, Ph.D., Ithaca, N Y
- 3 The Influence of Diet on Aging Processes
 Professor L. A. Maynard } Ithaca, N Y
 Professor C. M. McCay }
- 4 Colored Reproductions of Normal and Pathological Blood Cells
 William A. Groat, M D, Syracuse, N Y
- 5 Certain Laboratory Aids in the Early Diagnosis of Communicable Disease
 A. H. Harris, 2nd M D, Albany, N Y
- 6 Cancer
 Prepared by the Metropolitan Life Insurance Company
- 7 There will be a trip to the Physiological Field Station where Howard Liddell, Ph.D., of Cornell University, will exhibit the technic and mechanical devices used in the study of the neurotic animal

Sixth District Branch Officers

President George M. Mackenzie, M D, Cooperstown
 1st Vice-Pres Norman S. Moore, M D, Ithaca
 2nd Vice-Pres Charles L. Pope, M D, Binghamton
 Secretary Hubert B. Marvin, M D, Binghamton
 Treasurer William A. Moulton, M D, Candor

Presidents of Component County Societies

Broome Charles M. Allaben, M D, Binghamton
 Chemung George R. Murphy, M D, Elmira
 Chenango M. G. Boname, M D, Oxford
 Cortland Robert Fairchild, M D, Marathon
 Delaware Thomas C. Monaco, M D, Walton
 Otsego Ralph Horton, M D, Oneonta
 Schuyler Paul F. Willwerth, M D, Montour Falls
 Tioga Charles J. V. Redding, M D, Owego
 Tompkins Hudson J. Wilson, M D, Ithaca

Bobby "Say, mother, was baby sent down from heaven?"
 Mother "Yes, Bobby"
 Bobby "They like to have it quiet up there, don't they?"—*Pathfinder*

Delicate Patient "I fear I have a weak constitution."
 Physician "Your constitution is all right, but several of your bylaws need fixing"—*Medical World*

Thirty-Fourth Annual Meetings of the District Branches

PROGRAMS



Third District Branch

Tuesday, September 17, 1940

Colonie Country Club (Albany-Schenectady Road), Albany, New York

Morning Session 9.30 o'clock—Daylight Saving Time

Address of Welcome

Philip L. Forster, M.D., Albany
president, Albany County Medical Society

"What Has Saratoga Spa to Offer in the Field of Therapy?"—Lantern Demonstration

Walter S. McClellan, M.D., Saratoga Springs
medical director, Saratoga Springs Commission

Spa therapy, which includes the use of natural agents such as mineral waters in a regulated program with proper rest, exercise, diet, and recreation, is indicated in the treatment of many chronic conditions, particularly those affecting the circulatory, gastrointestinal, and locomotor systems. Spa therapy as practiced at the Saratoga Spa will be discussed to illustrate the practical application of this form of treatment.

"Gastric Hemorrhage"—Lantern Slides

Albert F. R. Andresen, M.D., Brooklyn
professor of clinical medicine, Long Island College of Medicine

Various causes of hematemesis will be discussed. The physiologic principles underlying hemorrhage from ulcer and their application to treatment will be emphasized. Rest, early frequent feedings, the use of gelatine and the avoidance of transfusions, stimulation, and external cold will be stressed. Results in a long series of cases will be reported.

"Observations on Human Refrigeration"

Temple Fay, M.D., Philadelphia
professor and head of the Departments of Neurology and Neurosurgery, Temple University School of Medicine

Refrigeration therapy for the treatment of malignant disease of the human body is a comparatively recent experiment. In general, the methods of reducing body temperature, means used, and results obtained will be discussed. In particular, the effect upon pain and the progress of the disease will be considered.

12.30 P.M.—Luncheon and Introduction of Guests

Afternoon Session 2.00 o'clock

Business Meeting—Election of Officers

"The Present Status of Sulfathiazole in the Treatment of Infections"

Charles H. Rammelkamp, M.D., Boston
assistant in medicine, Boston University School of Medicine

Clinical and experimental studies on the use of sulfathiazole in the treatment of a variety of infections will be presented. Comparative studies with sulfanilamide and sulfa pyridine will be given in an attempt to show which drugs are superior in the treatment of various infections.

"Advances in the Specific Treatment of Pneumonia During the Past Year"

L. Whittington Gorham, M.D., Albany
professor of medicine, Albany Medical College, and physician in chief, Albany Hospital

Analyses of several large series of cases from the literature will be presented, dealing with the present status, relative value of, indications for and contraindications for the use of specific serum, sulfapyridine and sulfathiazole. These results will be interpreted in the light of the experience of the Pneumonia Service at the Albany Hospital during the past twelve months.

Entertainment for Ladies

The Woman's Auxiliary of the Medical Society of the County of Albany has arranged the following:

Headquarters will be at the De Witt Clinton Hotel, Albany, which is located at the corner of State and Eagle streets.

Auxiliary business meetings will be held at 10.30 A.M., each county auxiliary having its own meeting.

At 12.00 noon, there will be a luncheon at the De Witt Clinton Hotel.

From 2.00 P.M. to 4.00 P.M. there will be bridge for those who care to remain at the hotel. For those who do not care to play cards, shopping or visits to Albany's public buildings will be arranged.

At 3.45 P.M. there will be a musical tea at the De Witt Clinton Hotel.

The wives of all members of the Third District Branch will be welcomed at these functions whether they are members of the auxiliary or not.

of any company. It is more important to know if the company is entered in New York State, the proportion of its assets to liabilities, whether its investments and underwriting policies are sound, what its policy forms cover or exclude, *and the service it is equipped and ready to give its policyholders when they need it.* These are the real tests of the value of insurance, and worthy solicitors will be able to discuss them intelligently. Those who cannot do so and particularly those whose chief claim for consideration is that they represent domestic companies are not worthy of time or attention.

CLARENCE G. BANDLER, *Chairman,*
Malpractice Defense and Insurance Committee

THE SOCIETY OF THE NEW YORK HOSPITAL LEWIS CASS LEDYARD, JR. FELLOWSHIP

THE Lewis Cass Ledyard, Jr. Fellowship was established in 1939 by a gift from Mrs. Ruth E. Ledyard, wife of the late Lewis Cass Ledyard, Jr., a Governor of The New York Hospital. The income, amounting to approximately \$4,000.00 annually, will be awarded to an investigator in the fields of medicine and surgery, or in any closely related field. This amount will be applied as follows: \$3,000.00 as a stipend and, approximately, \$1,000.00 for supplies or expenses of the research. In making the award, preference will be given to younger applicants who are graduates in medicine, and who have demonstrated fitness to carry on original research of high order. The recipient of this Fellowship will be required to submit reports of his work under the Fellowship, either at stated intervals or at the end of the academic year, and when the result of his work is published he will be expected to give proper credit to the Lewis Cass Ledyard, Jr. Fellowship. The research work under this Fellowship is to be carried on at The New York Hospital and Cornell University Medical College. The Fellowship will be available on July 1 at the beginning of the academic year. Applications for the year 1941-1942 should be in the hands of the Committee by the 15th of December. It is expected that the award will be made by March 15, 1941.

Application for this Fellowship should be addressed to

The Committee of the Lewis Cass Ledyard, Jr. Fellowship
The Society of The New York Hospital
525 East 68th Street
New York, N. Y.

MALPRACTICE INSURANCE

Responsibility and Stability of Group Plan Insurance Company

IN A letter dated October 6, 1939, the Honorable Louis H. Pink, Superintendent of Insurance for the State of New York stated, in part

"The Yorkshure Indemnity Company of New York is a New York State Corporation and from statements filed by the company with this department, it would appear that all of its assets are held in the United States "

That letter which constitutes the most authoritative statement that can be had on the subject was printed in full in the November 15, 1939, issue of the JOURNAL. Nevertheless, numerous inquiries continue to be received from members who are disturbed about the possible consequences of the war and who apparently are having a false point of view regarding "foreign" insurance companies persistently urged upon them.

While the State Society holds no briefs either for or against so-called foreign companies, the facts concerning them are presented for the benefit of all members.

When an insurance company, organized under and having its principal place of business in some country other than the United States, decides to establish a United States branch for the purpose of engaging in business here, it must "qualify" or "enter" in the states where it proposes to operate. That means, it must post *in acceptable securities* the deposits required of all companies. It must appoint agents to receive legal service on behalf of the company, file its rates and policy forms, establish and maintain the necessary reserves and surpluses, file annual statements and be subject to periodic inspections by the insurance department of the state of entry, exactly the same as a domestic company organized under the laws of that state. By these requirements the insurance department exercises close supervision and control over all companies doing business in the state. For example, a domestic company is not permitted by the superintendent to follow an unsound dividend policy that would tend to impair the financial position of the company. Accordingly, foreign companies are not permitted to withdraw funds from their United States branches so as to impair their finances in this country.

Commenting on these facts in an address to the Life Underwriters Association of New York and members of the Bar of Metropolitan New York in May of this year, Superintendent Pink, said

"These alien companies are required to meet the same general requirements for capital, surplus, and reserves as our own companies.

"These funds are deposited in this country with state supervisors and trustees and the United States branches entered through this state are subject to the same supervision as our own domestic companies. None of the trust funds belonging to the alien companies can be withdrawn without the consent of the Department and we are naturally more conservative in permitting withdrawals in times such as these."

Thus, it will be seen that the standing or even the existence of the parent companies has no effect upon the financial stability of the United States branches so far as the security of policyholders is concerned. Being completely self-contained and independent in this country, these branches become for all practical consideration domestic companies.

For these reasons, members of our Society should not permit themselves to become perplexed by solicitors who raise the question of nationality of insurance companies. In the insurance business, as well as in other forms of human endeavor, there is an element, usually found in the less successful fringe of the business, that is always avid to seize upon any situation or argument to draw what they hope will be favorable attention to themselves. In times of stress in Europe they have always been at their vociferous best in setting up the cry of "foreign company," taking care to avoid any explanation of the facts pointed out by our superintendent of insurance. They merely apply the tag and hope by creating doubt to frighten the uninformed insurance buyers into the waiting arms of themselves and their domestic companies.

Nationality as well as the mere size of a company or the cheapness of its rates are poor yardsticks with which to measure the value of the protection offered by its policies.

Public Health News

State Health Department Increases Availability of Antipneumococcus Serums

THE Division of Laboratories and Research of the New York State Department of Health announces that antipneumococcus serums for the treatment of pneumococcal pneumonia or meningitis of all the recognized types of pneumococci* are now available. Serums for the most commonly encountered types may be obtained at many of the laboratory supply stations. Serums for the less common types are distributed from the Central Laboratory in Albany and the Branch Laboratory, 339 East 25th Street, New York City. Upon request either of these laboratories will send the desired serum by the most rapid means available.

The supplying of serums for the treatment of patients with infections of the less common types is no longer restricted to patients with positive blood cultures but will be provided whenever the physician is of the opinion that the patient will benefit from its use.

Further information relating to the available supplies of antipneumococcus serum may be obtained from custodians of supply stations, district state health officers, the Central Laboratory in Albany, or the Branch Laboratory in New York City.

* Except for types XXVI and XXX which are considered closely related to or identical with types VI and XV, respectively.

PHYSICIANS' PENSIONS

The Social Security Act takes no heed of the fact that physicians, too, grow old, remarks the *New York Medical Week*. Few medical men earn enough in their years of practice to provide for an inactive old age.

During their period of activity physicians contribute a large portion of their working time to the sick poor without remuneration. At present they are required to pay direct and indirect taxes to provide security for the old age of others. Why is there no provision for their declining years?

It is one of the grave faults of the present social security laws that they single out certain classes of the population for protection and neglect other large groups which must nevertheless pay for benefits they do not share. The exclusion of domestic workers, farm help, and professional men from pension benefits is illogical and unjust.

All through their active years physicians give medical aid without payment to persons who should properly be assisted by the state. The least the state can do in return is to allow medical men to share in the protection provided for dependent old age.

DISCOVERING CONTACTS

Although the death rate from tuberculosis has declined markedly in recent years, the risk for certain families is virtually as great today as it ever was. These are the families that have, or have had, infectious cases in their midst. They are, as *Health News* points out, "the great reservoirs of tuberculous infection."

It would not be a difficult thing to discover and root out the danger lurking in these families. Every adult member of tuberculous households should be examined regularly, regardless of whether he presents symptoms or not, urges the *New York Medical Week*. Radiographs are an essential part of such examination, for they reveal cases in an early stage, before the lesion has progressed and when treatment is most effective.

Until the "reservoirs of infection" have been drained we cannot hope for complete control of tuberculosis. It is illogical to segregate diagnosed cases without attempting to discover hidden ones. The latter are most likely to be found by tracking down the contacts of infected persons. This is the most effective way of detecting early unsuspected lesions and preventing further transmission of the disease.

WORKMEN'S COMPENSATION

RECENTLY a situation arose in which an insurance carrier objected to paying a bill of an x-ray specialist for an examination made on order of a referee of the Department of Labor. The carrier contended that the referee ordered the insurance carrier to produce the x-rays at the next hearing and that the claimant did not have the right to choose his own physician to take such x-rays.

An opinion was requested of the Director of the Division of Workmen's Compensation of the Department of Labor, who on June 1, 1940, stated that it was his opinion that where the referee ordered the carrier to produce x-rays, the claimant still retained the right to go to his own physician to have them taken. This matter was then referred by the Director of the Division of Workmen's Compensation to the Industrial Board for an opinion.

On June 7, 1940, the Industrial Board passed the following resolution:

"Resolved, That the Industrial Board believes that the Referee should use his discretion when directing that x-ray examinations be made for comparison or evaluation purposes. The Board is of the opinion that the carrier should provide such x-ray examinations and reports generally, but if the Referee believes that the claimant should produce the same, he may so direct the claimant and if the cost of the x-rays exceeds Ten Dollars, he should obtain authorization from the carrier before directing the claimant to produce the same."

Your Director of Workmen's Compensation on June 27, 1940, communicated with Mr. Richard J. Cullen, chairman of the Industrial Board, and protested this ruling. He was given an opportunity to appear before the Industrial Board on July 26, 1940, and argued for a change in the resolution. It was your Director's opinion that where x-rays are required for diagnosis or for the guidance of the physicians of the Department of Labor in expressing an opinion as to disability, scheduled loss, etc., it was the patient's right to choose a qualified physician to take such x-rays and render an independent opinion.

Your Director further argued that it was not within the province of the referee in the ordinary case to direct the choice of a physician. It was his opinion that in *controverted* cases where the evidence produced was of a conflicting nature, the Industrial Board or the referee, on the recommendation of the medical examiner of the Department of Labor, could designate an especially qualified physician (roentgenologist) to examine patient and render a report. Otherwise, in ordinary cases up for a hearing, the choice of roentgenologist lay with the claimant or his attending physician, unless the claimant waived his right to free choice in writing.

Under date of July 29 the following communication was received from the Industrial Board and speaks for itself:

"The Industrial Board, after discussing this question with you at its meeting on July 26, 1940, reconsidered this matter, and after due consideration, unanimously adopted the following resolutions:

"Resolved, That the Industrial Board hereby rescinds its resolution of June 7, 1940,

"Further Resolved, That the Industrial Board is of the opinion that where the referee directs the taking of x-rays, it is the privilege and right of the claimant to furnish such x-rays, payment for which shall be in accordance with Section 13 a (5) of the Workmen's Compensation Law."

DAVID J. KALISKI M.D., Director

and socialized medicine. He recently finished a series of motion pictures in color of gynecological operations for teaching purposes

Chemung County

About seventy physicians and guests put aside their cares to make merry on July 31 at the annual outing of the Chemung County Medical Society at the Cold Brook Club

A team of graduates from the University of Buffalo Medical School, the alma mater of many Elmira doctors, was defeated, 10-4, by a team drawn from other college alumni in a baseball game which featured the outing's sports program.

In a golf tournament at the Country Club preceding the outing, Dr J Lee Kinner won the Doctors' Cup, with Dr Ross E Hobler as runnerup

The dinner program was highlighted by the annual "singing class" of Dr Joseph S Lewis, who each year leads the society in a traditional song and a new one of his own composition.

Dr Arthur C Smith was outing chairman.

Erie County

Dr Marietta C Catalano MacLean, of Buffalo died on August 3 at the age of 40

Mrs MacLean who devoted her medical practice chiefly to obstetrics and brought into the world hundreds of babies, died following the birth of her own child according to the Buffalo *Evening News*. The baby girl, Marietta Ann, was born July 29. Mrs MacLean was obliged to undergo two operations

In politics Mrs MacLean had served as a Republican state committeewoman for three terms, 1932 to 1934 and 1936 to 1940. She also was a county committeewoman and in each capacity was the first woman of Italian extraction to be chosen. She was elected to the state office from the First Assembly District. She was on the County Executive Committee and was active in many campaigns. In 1932 she stumped the state in behalf of the gubernatorial candidacy of Colonel William J Donovan.

Mrs. MacLean was the organizer in 1928 of the Woman's Columbian Republican League. She was active in promoting the league's annual parties on Columbus Day for Republican candidates events which have highlighted campaign calendars

Born in Buffalo on April 15, 1900, the daughter of Pietro and Cosima Catalano, Mrs MacLean attended the University of Buffalo, from which she received her medical degree in 1923. She worked as a newspaper reporter and telegraph operator to earn funds for her college education. While attending the university she was an intern at the Erie County Hospital

Following her graduation Mrs MacLean in turned at the Bellevue Hospital in New York City and took an additional medical degree at New York University in 1925. She had practiced in Buffalo since that time

Kings County

The following physicians have been elected officers of the Brooklyn Ophthalmological Society for 1940: president, Maurice L Wieselthier, vice-president, Walter Moehle, secretary-treasurer, Harold F Schulback, assistant secretary-treasurer, Irving Jacobs

Nassau County

The medical profession must join hands with the army in meeting the threat of war by working for health and medical preparedness, an essential element to national strength, Dr C C Pierce, medical director of the United States Public Health service, told the annual conference of health officers of the New York metropolitan area at the Salisbury Golf Club, Westbury, on July 23

Dr Pierce spoke before 127 representatives of national, state, city and county health units who met at Westbury for the annual summer conference.

A business session was held in the morning, devoted to recreation. The visitors were greeted at the luncheon by Raymond W Houston, deputy county executive of Nassau, Dr Benjamin R Allison, chairman of the Nassau Board of Health and Dr Aaron L Higgins, president of the Nassau County Medical Society

The conference was arranged by Dr Earle G Brown, Nassau health commissioner

Papers were read at the business session by Dr Ernest L Stebbins, professor of epidemiology at Columbia University on "The Importance of Water Supplies as a Means of Transmission of Bacillary Dysentery", by Dr S J Crumbine, executive secretary of the American Child Health Association on "Public Health Practice at the Beginning of the Twentieth Century", by Alta Elizabeth Dines, chairman of the Nursing Advisory Committee of the American Red Cross, on "Preparedness in Public Health Nursing", and by Dr John L Rice, New York City commissioner of public health on a recent outbreak of food poisoning

New York County

The experiment in low-cost medical care now under way in Vladeck Houses is one of the most interesting yet attempted, says the *New York Medical Week*. It seeks to provide the tenants in a municipal housing project with a complete health service through the medium of their neighborhood physicians and hospitals

The cost to each subscriber will be twenty-five cents monthly or three dollars a year, with twenty-five dollars the annual maximum for any family. Participating physicians—and all licensed practitioners are eligible to join—will receive the full annual dues paid by the families they treat. The New York Foundation will defray all administrative expenses

When necessary, hospital service will be supplied by the two principal medical institutions in the district—Gouverneur and Beth Israel hospitals. Even when a patient is hospitalized, however, the practitioner in domiciliary attendance will continue to oversee the case.

A significant aspect of the project is that the subscribers belong to that economic class which

Medical News

A Permanent Health Museum

THE permanent American Museum of Health, Inc., will be open to the public early in 1941," Dr George Baehr, member of the American Museum of Health Board, declares.

This announcement followed Park Commissioner Moses' confirmation that the Museum would be kept as a permanent building on the World's Fair site at the conclusion of the Fair, October 27. The Museum, now housed in the Medicine and Public Health Building, is expected to make its future home in the structure presently occupied by the Masterpieces of Art.

The Museum is the first of its kind to be open to the American public. Dr Bruno Gebhard, formerly assistant to Homer N. Calver, director of the American Museum of Health, Inc., at the 1940 Fair, is currently working on the establishment of a similar museum in Cleveland.

Giving credit to Mayor LaGuardia for the energetic support which he has given to the enterprise, Mr. Calver said that "New York will give to America a new mechanism for the conservation of human life."

"The permanent Museum of Health will be one of the greatest outgrowths of the World's

Fair," said Dr. Baehr. "We fervently believe that it will be the center from which will emanate the developing techniques of health education for the people of our city and nation. To this center will come hundreds of physicians and public health officers for training in the modern methods of health education, and it will share its accumulating store of rich experience and its wealth of technical material with all the health and welfare agencies of the land."

The Medicine and Public Health Building—one of the most popular at the Fair—has attracted more than nine million visitors since its opening last year. A survey reveals that the American Museum of Health has attracted more than 21 per cent of the total Fair paid attendance this year.

The permanent American Museum of Health will be among seven units that will remain as parts of Flushing Meadow Park when the 1940 Fair closes. Other buildings are the New York City Building, the New York State Marine Amphitheatre, the B. F. Goodrich Company Building, the House of Jewels, Gardens on Parade, and the Japanese Pavilion.

Those Popular Fair Films

HEALTH—man's favorite subject—outdraws love, music, and murder as movie musts, judging from attendance at the Little Theatre in the Medicine and Public Health Building at the World's Fair. Documentary health movies, designed to educate the general public, have played to capacity audiences since the Little Theatre opened in May, duplicating the experience of last year. More than 1,400,000 persons, one-fifth of the Fair attendance, have visited the Medicine and Public Health Building so far this season.

"With These Weapons," a story of social diseases, "Choose to Live," a two-reel sound film on cancer control, "Let My People Live," which deals with tuberculosis, and "A New Day in Health Protection," have proved of vital interest to Fair visitors.

The progress in the diagnosis and treatment of syphilis is pictured in a talking motion-picture film that brings to the public for almost the first time graphic presentation to indicate the prevalence of the disease.

"Cancer has been on the increase in recent years. It now ranks second among the causes of death. It is no respecter of persons." With these words, Dr. Thomas Parran, Surgeon General of the United States Public Health Service, opens a film on cancer control. The movie points out the importance of treating cancer immediately.

An all-Negro cast, headed by Rex Ingram—"De Lawd" of "Green Pastures"—presents a vivid picture of tuberculosis neglected, tuberculosis discovered early and treated, and tuberculosis anticipated and prevented.

The dangers of a cold, how it leads to pneumonia, its treatment by those new discoveries, sulfapyridine and serum, is a familiar story that affects the Wilson family in "A New Day in Health Protection."

This film, like all others in the Medicine and Public Health Building series, imparts information that may prove to be the difference between life and death to some of the thousands who have taken advantage of the opportunity to see it.

County News

Bronx County

Dr. Maurice O. Magid, gynecologist and obstetrician, died on July 31 at the age of 57. A former president of the Bronx County Medical Society, he was a founder and director since 1924 of Hunts Point Hospital. He was also a founder and past-president of the Bronx Gynecological and Obstetrical Society and past-president of the New York Physicians Association.

Born at Skalatz, Austria, he came to this

country in 1892 and was graduated from Cornell University Medical School in 1905. From 1913 to 1918 he was instructor in gynecology at the New York Polyclinic Medical School and Hospital. He served as attending gynecologist at New York City Correction Hospital since 1926 and in the same capacity at Bronx Hospital since 1931.

Dr. Magid was active in organized medical societies and wrote widely on medical economics.

\$34,000 in hospitalization of relief cases during the year it has been in operation and in similar economies in all other medical requirements.

"This saving was accomplished despite an increase of from 3,000 to 3,500 hospitalization cases during the year," Mr. Williams said. "The economy has been applied all along the line except in the cost of drugs, and has proved that it is cheaper to give care in the homes when possible."

Mr. Williams said the medical society's advisory committee has cooperated with his department in carrying out the program and "we now are ready to participate in a state-wide program since we have a recognized local program in operation in the county."

He said the county program had resulted in sound service in the best interests of both welfare clients and physicians and "although sensible restrictions have been placed upon the physicians, we have found in many instances they have had wider privileges."

Mr. Williams announced that state reimbursements have been received making it possible to repay all of the \$50,000 borrowed by the county to pay welfare expenses.

Westchester County

The Westchester County Medical Society's Special Committee on Medical Preparedness is progressing rapidly with its survey of the existing situation in the county and tentative plans for the possible mobilization of the county's medical resources in the event of a national emergency, reports the county society's *Bulletin*.

In so doing the local committee under the chairmanship of Dr. Erich H. Restin is working

in close harmony with the similar committee of the State Medical Society under the chairmanship of Dr. Samuel J. Kopetzky, of New York, and with the similar committee of the American Medical Association headed by Dr. Irvin Abell, of Lexington, Kentucky. The county committee has recently circulated a questionnaire among all local physicians requesting very much the same information as has been requested by the American Medical Association in its national questionnaire. The local committee, having the interest of local physicians in mind, found it most complete information concerning the qualifications, personal situations, and preferences of local physicians. Hence, the local committee expects to be in a position to give helpful advice and suggestions to individual physicians in the county and also to cooperate more intelligently and effectively with the state and national committees.

The county committee has also under preparation a plan to survey the hospital and other institutional facilities in the county both on a county-wide basis and on a regional basis.

Wyoming County

The annual outing of the Tri-County Medical Society took place on Thursday, August 8, at the Silver Lake Golf and Country Club. Members took part in a golf tournament at 1:00 P. M. and dinner was served at 7:00 P. M. The principal speaker was Dr. James M. Flynn, of Rochester. There was dancing from 9:00 until 12:00. Arrangements were made for bridge during the afternoon for wives of physicians.

Deaths of New York State Physicians

Name	Age	Medical School	Date of Death	Residence
Michael L. Casey	70	Pennsylvania	August 6	Rochester
John H. Cipperly	84	N Y Univ	July 17	Irrington
Douglas D. Curry	41	McGill	July 16	South Dayton
William H. Donnelly	59	McGill	June 22	Brooklyn
Amelia Fendler	70	W M C Balt	August 4	Manhattan
George J. Gannett	63	N Y Hom	July 20	Syracuse
Robert Kingman	64	L I C Hosp	August 7	Brooklyn
Nicholas Lawrey	69	Maryland	June 17	Brooklyn
Frank W. Love	70	Cornell	July 21	Brooklyn
Isaurice O. Magid	57	Cornell	July 31	Buffalo
Federick A. Mendlein	69	Buffalo	July 12	Manhattan and Bronx
Henry W. Morsch	57	P & S N Y	July 30	Buffalo
William Neumann	66	P & S N Y	July 27	Woodhaven
Friedrich Schuff	51	Berlin	July 30	Manhattan
Penney H. Wheatley	72	Vermont	August 4	Brooklyn

NO ARMISTICE IN THIS WAR

Described as the beginning of a determined war on every quack in Pennsylvania, a raid on a private hospital near York was conducted recently under the personal supervision of Thomas F. Long, chief law enforcement officer of the Bureau of Professional Licensing of the Department of Public Instruction. The hospital was described as a "den of filth" and one emaciated mental patient was found strapped to a bed.

THE PATIENT IS GRATEFUL

Letter received by A. R. S., Oklahoma
 Dear Sir — I just received your letter wanting to no when I could send you some money. I dont no I havent never gotten able to work any yet. dont worry if I ever get able to work and can get a job I sure will pay you for that medson you gave me that come so near to killing me I havent gotten over it and dont guess I ever will. — J. A. M. A.

would ordinarily have to seek private or public medical charity. Under the contemplated arrangement, they will contribute something toward their medical needs but will receive a far more complete health service than they could hope to obtain independently with the money or by haphazard applications for philanthropic aid.

By this plan the strain on the overcrowded dispensaries in the district will be lessened and available facilities conserved for patients really in need of institutional care. Participating physicians will receive something, however little, from patients whom they would ordinarily have to treat without compensation. Above all, they will help to keep alive self-respect and a spirit of self-help in a group which threatens to be submerged by governmental paternalism.

The Medical Society of the County of New York has approved the Corlears Hook experiment for a two-year trial. It will have two representatives on the supervisory medical board, which will also include two physicians each from Gouverneur and Beth Israel hospitals and the Lower East Side doctors. If this experiment succeeds, it will point the way to other voluntary group plans for wage earners in the low-income brackets.

Niagara County

The annual outing of the Niagara County Medical Society was held on August 7 around Grand Island on the steamer "Seabreeze." Dr R. P. Reagan, of North Tonawanda, is president of the county association.

Members of the Twin City Academy of Medicine also joined in the picnic, which was a stag affair.

The "Seabreeze" picked up the Tonawanda and North Tonawanda picnickers first, leaving the Niagara River dock at 3:00 P.M. and going to Niagara Falls, where the remainder of the outing crowd boarded the steamer.

The party had lunch and refreshments aboard the boat. Dinner was served at the Buffalo Launch Club, near the south Grand Island Bridge after the boat ride.

Several hundred, including members of the association and their friends, participated in the program that was arranged.

Onondaga County

Approval of a salary system for the remuneration of doctors taking care of welfare patients in the rural districts of Onondaga County, to replace the present fee system, was given by the Comitua Minora of the county society at a meeting on June 28, at which it voted to support the recommendation of the Public Relations Committee, which has been studying this problem through the winter.

This action, says the county *Bulletin*, means that the society, after thorough study, has approved a plan drawn up by the Commissioner of Public Welfare of the county. This plan must now be approved by the New York State Welfare Department, after which it will come before the County Board of Supervisors for consideration and final action.

The plan now in effect was formulated and adopted at a time when the relief load was light. With the present load it is found to be cumbersome and expensive. The doctors working under the plan have balked at the vast amount of red

tape involved. The county has found that this same red tape has necessitated excessive clerical help.

The plan now recommended pays each doctor a salary, based chiefly on his average monthly earnings under the fee schedule during the preceding year. Salaries will be readjusted at stated occasions and varied according to work done. No salary will, however, exceed \$150 per month. Obstetrical care will not be included under the salary. An additional \$25 will be paid for each delivery.

The proposed system will in no way affect the free choice of physician by the patient.

The present cumbersome methods of reporting calls to the Welfare Office will be done away with, and it will only be necessary to report total calls at monthly intervals.

A practicing physician in Syracuse and Onondaga County more than half a century, Dr John C. Shoudy died at his home after a three-day illness, on Aug. 4.

Though he was 71 years old, Dr Shoudy, who was widely known in Syracuse and who was a former commissioner of education, maintained his active practice until the beginning of his brief illness.

Rensselaer County

A plan to have the medical facilities of Rensselaer County organized and ready in event of war got under way in August as Dr C. W. Ham, president of the Rensselaer County Medical Society, named a preparedness committee of three men: Dr Clement J. Handron, Dr George E. Martin, and Dr Leo S. Weinstein.

Richmond County

Dr Arthur S. Driscoll has been named chairman of the Richmond County Medical Society's preparedness committee to care for the civilian population of the Island in the event of war. This committee is cooperating with the New York State Medical Society in making arrangements to care for the home population if necessary.

Serving with Dr Driscoll are Dr Herbert A. Cochrane, Dr George W. McCormick, Dr Donald E. Law, Dr Douglas Walsh, Dr E. C. Soldini, and Dr Herman Friedel.

Schenectady County

Dr Frank van der Bogert has been named chairman of the Schenectady County Medical Society's committee to aid in nation-wide organization of all medical facilities in the event of war, Dr F. Leslie Sullivan, president, announces.

Other members of the committee are Dr Albert Crouch, Dr Edward O'Keefe, Dr E. MacD. Stanton, and Dr Sullivan.

The committee will make a survey of local medical agencies for the purpose of making the personnel available for military service, public health work, and civilian health and local military work, in cooperation with the state and national medical associations' military preparedness committee.

Suffolk County

County Welfare Commissioner Irving Williams has informed the County Board of Supervisors that the medical program adopted by the department in cooperation with the Suffolk County Medical Society has resulted in a saving of

\$34,000 in hospitalization of relief cases during the year it has been in operation and in similar economies in all other medical requirements

"This saving was accomplished despite an increase of from 3,000 to 3,500 hospitalization cases during the year," Mr Williams said. "The economy has been applied all along the line except in the cost of drugs, and has proved that it is cheaper to give care in the homes when possible"

Mr Williams said the medical society's advisory committee has cooperated with his department in carrying out the program and "we now are ready to participate in a state-wide program since we have a recognized local program in operation in the county"

He said the county program had resulted in sound service in the best interests of both welfare clients and physicians and "although sensible restrictions have been placed upon the physicians, we have found in many instances they have had wider privileges"

Mr Williams announced that state reimbursements have been received making it possible to repay all of the \$50,000 borrowed by the county to pay welfare expenses

Westchester County

The Westchester County Medical Society's Special Committee on Medical Preparedness is progressing rapidly with its survey of the existing situation in the county and tentative plans for the possible mobilization of the county's medical resources in the event of a national emergency, reports the county society's *Bulletin*

In so doing the local committee under the chairmanship of Dr Erich H Restin is working

in close harmony with the similar committee of the State Medical Society under the chairmanship of Dr Samuel J Kopetzky, of New York, and with the similar committee of the American Medical Association headed by Dr Irvin Abell, of Lexington, Kentucky The county committee has recently circulated a questionnaire among all local physicians requesting very much the same information as has been requested by the American Medical Association in its national questionnaire. The local committee, having the interest of local physicians in mind, found it most essential for the Westchester Society to have complete information concerning the qualifications, personal situations, and preferences of local physicians. Hence, the local committee expects to be in a position to give helpful advice and suggestions to individual physicians in the county and also to cooperate more intelligently and effectively with the state and national committees

The county committee has also under preparation a plan to survey the hospital and other institutional facilities in the county both on a county-wide basis and on a regional basis

Wyoming County

The annual outing of the Tri-County Medical Society took place on Thursday, August 8, at the Silver Lake Golf and Country Club. Members took part in a golf tournament at 1 00 P.M. and dinner was served at 7 00 P.M. The principal speaker was Dr James M Flynn, of Rochester, president of the New York State Medical Society. There was dancing from 9 00 until 12 00. Arrangements were made for bridge during the afternoon for wives of physicians

Deaths of New York State Physicians

Name	Age	Medical School	Date of Death	Residence
Michael L Casev	70	Pennsylvania	August 6	Rochester
John H Cipperly	84	N Y Univ	July 17	Irvington
Douglas D Curry	41	McGill	July 16	South Dayton
William H Donnelly	59	McGill	June 22	Brooklyn
Amelia Fendler	70	W M C. Balt.	August 4	Manhattan
George J Gannett	63	N Y Hom.	July 20	Syracuse
Robert Kingman	64	L I C Hosp	August 7	Brooklyn
Nicholas Lawrey	69	Maryland	June 17	Brooklyn
Frank W Love	70	Cornell	July 21	Buffalo
Maurice O Magid	57	Cornell	July 31	Manhattan and Bronx
Frederick A Mendlem	69	Buffalo	July 12	Buffalo
Henry W Morsch	57	P & S N Y	July 30	Woodhaven
William Neumann	66	P & S N Y	May 27	Manhattan
Friedrich Schiff	51	Berlin	July 30	Manhattan
Tenner H Wheatley	72	Vermont	August 4	Brooklyn

NO ARMISTICE IN THIS WAR

Described as the beginning of a determined war on every quack in Pennsylvania, a raid on a private hospital near York was conducted recently under the personal supervision of Thomas F Long chief law enforcement officer of the Bureau of Professional Licensing of the Department of Public Instruction. The hospital was described as a "den of filth" and one emaciated mental patient was found strapped to a bed.

THE PATIENT IS GRATEFUL

Letter received by A R S, Oklahoma
 Dear Sir—I just received your letter wanting to no when I could send you some money I dont no I havent never gotten able to work any yet. dont worry if I ever get able to work and can get a job I sure will pay you for that medson you gave me that come so near to killing me I havent gotten over it and dont guess I ever will—J.A.M.A.

Medicolegal

LORENZ J. BROSNAN, ESQ.

Counsel, Medical Society of the State of New York

Libel of a Physician

RECENTLY the highest court of one of the western states handed down an interesting decision in an action that a physician instituted against a newspaper that he claimed had published libelous matter concerning him.*

The action, brought by Dr. B., a practicing physician and surgeon, against a newspaper corporation and its city editor to recover the sum of \$25,000 as damages, arose out of the publication in the said newspaper of the following article

BROKEN NECK KILLS CITY PRISONER INJURY DISCOVERED AFTER MAN SPENT DAY IN JAIL

"D a middle aged machinist, who lay all day in a padded cell at the City Jail with a broken neck before attendants discovered his condition to be serious, died yesterday at King County Hospital. D was found in the street Thursday, the Coroner's preliminary report showed. He was taken to police headquarters and was examined by Dr. L., of City Hospital who said he talked and walked normally and who diagnosed his case as plain drunkenness.

In the afternoon Dr. B. another City Hospital physician examined D and diagnosed his condition as alcoholic paralysis and ordered him removed to King County Hospital.

D lived at 1526 Belmont Avenue County Autopsy Surgeon W., after a postmortem examination said that D's neck had been fractured several hours before he was taken to jail.

In his complaint against the newspaper, Dr. B. alleged that the story as printed was untrue in that the man in question did not in fact lie all day with a broken neck in a padded cell in jail before his serious condition was discovered, that the plaintiff did not diagnose his condition as "alcoholic paralysis", that Dr. W., after his postmortem examination, did not in fact state that D's neck had been fractured for hours before he was taken to jail, and that the man had never sustained a broken neck and did not die as a result of such an injury.

The plaintiff claimed that as a result of the publication of the article his good reputation as a practicing physician had been greatly injured and impaired and that in his said professional capacity he had been held up to ridicule and contempt.

The case was tried before a jury and resulted in a verdict in favor of the plaintiff in the sum of \$10,000. The defendants moved for judgment notwithstanding the verdict. The Court denied that application but reduced the amount of the verdict to \$5,000.

The defendants took the matter up to the highest court of the State upon appeal, and that court held that it was error for the trial court to deny the application for judgment notwithstanding the verdict, upon the theory that the

facts in question did not justify a determination that the defendants had been guilty of publishing writings concerning the plaintiff that were libelous *per se*.

As the Appellate Court pointed out in its decision, the statute in effect in that state, which defined libel, provided as follows:

"Every malicious publication by writing, printing, picture, effigy, sign or otherwise than by mere speech, which shall tend,

"(1) to expose any living person to slander, contempt, ridicule or obliquity, or to deprive him of the benefit of public confidence and social intercourse, or

"(3) to injure any person, corporation or association of persons in his or their business or occupation, shall be libel."

The Court found that the alleged defamatory publication was not of such a nature as to be actionable *per se* and that the record was wholly lacking in any proof of special damages and for that reason reversed the judgment of the lower court and directed that the complaint should be dismissed. In so deciding, the Appellate Court said in its opinion:

"It is evident from a consideration of the whole article and its nature and character that the most that can be said is that the respondent made an incomplete diagnosis in that he did not discover that D was suffering from a fracture dislocation of the neck spine, or in lay language, a broken neck. There is no intimation that a discovery of the neck ailment before his admission to the hospital would have saved his life. The article was commendatory of respondent's action in that he was the one individual who recognized that the prisoner was in a serious condition and took the necessary steps to have him removed to a hospital where he might receive additional medical care. The language contained in the writing was not equivocal and the article was not libelous *per se*.

"Assuming that the article did charge the respondent with having made a wrong diagnosis, still it would not be libelous *per se*. A physician is only required to possess the ordinary knowledge and skill of his profession and is not liable for mistakes if he uses the methods recognized and approved by those reasonably skilled in the profession.

"It is clear that to charge a physician merely with the mismanagement or the making of a wrong diagnosis in a particular case is not of itself actionable. Such a charge implies nothing more, at the most, than ignorance or unskillfulness in that case, and does not materially affect his reputation as respects his general competency to practice his profession.

"To charge a professional man with negligence or unskillfulness in the management or

* *Blende vs Hearst Publications Inc.* 93 Pac (2d) 733

treatment of an individual case is no more than to impute to him the mistakes and errors incident to fallible human nature. The most eminent and skillful physician or surgeon might mistake the symptoms of a particular case without detracting from his general professional skill or learning. To say of him, therefore, that he was mistaken in that case would not be calculated to impair the confidence of the community in his general professional competency.

"This rule does not apply, of course, to those cases in which the charge of gross misconduct is such as to imply the unfitness of a physician in his profession."

Inquiries*

Your Counsel recently received the following jury

"My dear Mr Brosnan

"I would like your advice, as soon as possible, on the following problem

"One of our interns, a Dr A, was treating an outpatient several months ago at S Hospital for a penetrating wound on the leg due to a dog bite. He was treating the wound with fuming nitric acid. The patient jumped and some of the nitric acid ran down her leg producing a sore four inches long which was very slow to heal.

"Dr A is now being sued personally for this accident. I was in charge of the service and presumed, he was my assistant, although in fact, he is working for the hospital.

The hospital had no insurance protection at that time against this accident. The intern is being sued, I am not mentioned, as far as I know. He has six days to file a reply to the Summons and Complaint which he received this morning. Could you let me know if this is a hospital liability if an intern who has, as yet, not received his license could be sued and also if I, who had charge of the service at that time, would be responsible for the acts of the intern? What defense has the intern in this case? An early reply would be appreciated."

"Very sincerely yours"

Your Counsel's reply was as follows

Dear Dr

"I acknowledge receipt of your letter of June 28 in which you inquire with respect to a problem arising out of treatment of a dog bite by fuming nitric acid administered by an intern.

"I assume that S Hospital is operated as a charitable not for profit institution. As such I hold that the hospital is not responsible for the acts of an intern in treating a patient unless there were some negligence established of an administrative nature.

"I also believe that if an action were brought against you by the patient under the decided cases there would be no legal responsibility on your part for the acts of an intern working on

*NOTE: The House of Delegates requested your Counsel to print in the JOURNAL from time to time inquiries and opinions of general interest to members of the medical profession

your service unless it could be established that in some manner you were personally negligent. "As to the intern himself I believe that it is proper for a suit to be brought against him, even though he was not at the time of the acts in question licensed as a physician.

"If the plaintiff is able to establish negligence on his part the plaintiff may very well be in a position to hold him financially responsible for any damages which she sustained. Of course, it is incumbent upon the intern in defense of the action to prove if possible that there was no actual negligence on his part, that the negligence, if any, was the negligence of the patient, and that he did all that was reasonable and proper under the circumstances."

"Very truly yours,"

Your Counsel recently received the following inquiry

"Dear Mr Brosnan

"A member of our Society has raised the following question in regard to which I would appreciate very much having your opinion

"Assuming that it is illegal to name the father of an illegitimate child on the New York State birth certificate, may the physician who signs the birth certificate be held responsible by such father or anyone else on the certificate without investigating the information given him.

- 1st. If he puts the name of such father given him as that of the father."
- 2nd. If he accepts the fictitious name

Sincerely yours"

Your Counsel's reply was as follows

Dear Dr

Section 383 of the Public Health Law reads so far as is pertinent to the question raised by your letter, as follows

Sec 383 'Certificate of birth. The certificate of birth shall contain the following items, which are hereby declared necessary for the legal, social, and sanitary purposes subserved by registration records

'8 Full name of father, provided that if the child is illegitimate, the name of the putative father shall not be entered without his consent, but the other particulars relating to the putative father may be entered if known otherwise as 'unknown'."

It would seem to follow therefore that a physician signing a birth certificate of an illegitimate child may not give the name of the putative father without his consent.

"With respect to Subdivision 2 of your letter Section 392 of the Public Health Law reads so far as is pertinent to the question, as follows

'Sec 392 'Penalties. Any person who shall willfully alter otherwise than is provided in this article or shall falsify any certificate of birth shall be deemed guilty of misdemeanor."

"And further. Whenever any physician shall fail or neglect to properly record and file a certificate of birth as required by

this article such person shall be liable to a penalty of not less than five dollars nor more than fifty dollars for the first and second offenses

"It would follow, therefore, that a physician

accepting a fictitious name, which he knew or in the exercise of reasonable care should have known to be fictitious, and attaching it to the birth certificate, would be guilty of a misdemeanor "

"Very truly yours,"

CALIFORNIA MIGRANTS GIVEN MEDICAL HELP

Medical help for the acute health problems of the *Grapes of Wrath* migrant agricultural workers in California and Arizona is being given as fast and far as possible by the Agricultural Workers Health and Medical Association, it appears from a report to the American Medical Association by its Bureau of Medical Economics chief, Dr. R. G. Leland

Nearly 38,000 migrant workers and their families have already been given medical, dental, hospital, and other health care by this mutual benefit association organized in May, 1938. Doctors, dentists, druggists, and hospitals of California and Arizona, the Farm Security Administration, California Medical Association, the California State Department of Public Health, and the United States Public Health Service have cooperated in planning and carrying out the program

Headquarters of the association are at Fresno, California, with regional offices in Arizona and as far north as Willows, Marysville, and Santa Rosa, California. The personnel of these regional offices has followed the crops, in the wake of the migrant army, in order to be near at hand to serve it. At first member patients were referred to doctors' and dentists' offices in the vicinity, but now most of them are served in clinics staffed by doctors chosen by the county medical societies

PREMARITAL BLOOD TESTS—NEW YORK CITY

It seems that there has been some unfavorable comment on the routine followed by the New York City Health Department's social hygiene centers in drawing blood from applicants for premarital examinations and forwarding the reports to the private physicians of the applicants. This practice was instituted only because of a desire to serve both physicians and the public.

A number of physicians have expressed dissatisfaction with this routine, pointing out the possibility of fraud through the substitution of one person for another. The Department of Health appreciates the value of this criticism, it declares, and has therefore made certain changes in its procedure. Hereafter only applicants who present to the social hygiene centers written requests from their own physicians, on the physician's letterhead or prescription blank, together with a signature of the applicant written thereon in the presence of his physician, will be accepted by the social hygiene stations for drawing blood for premarital examinations. On entering the station the applicant will be requested to sign his name a second time in the presence of the clinic physician. In this way there will be a check on the identity of marital applicant.

Under no circumstances will any Health Department station perform the required *physical* examination for premarital purposes—this is the exclusive function of the private physician

PAN-AMERICAN CONGRESS OF OPHTHALMOLOGY

Plans for a Pan-American Congress of Ophthalmology to be held at the Hotel Cleveland, Cleveland, Ohio, October 11 and 12, have been announced

The Congress will be sponsored by the American Academy of Ophthalmology and Otolaryngology, which will hold its annual convention immediately preceding the Pan-American gathering

The United States Department of State has expressed its interest, and the governments of all the countries of the Western Hemisphere have been invited to send official delegates. It is felt that the meeting will do much toward bringing about an *entente cordiale* among scientific men of the two Americas, and it is expected that a permanent organization will be effected

The committee that is developing the Congress has the following members: Dr. Harry Gradle, Chicago, Dr. Conrad Berens, New York City, and Dr. Moacyr E. Alvaro, São Paulo, Brazil. The executive secretary of the American Academy of Ophthalmology and Otolaryngology, which will be host to the Latin-American eye specialists, is Dr. William P. Wherry, 1500 Medical Arts Building, Omaha

Under the direction of Dr. Berens, papers in

Spanish or Portuguese will be made understandable to English-speaking ophthalmologists by the use of lantern slides projecting a synopsis of each paragraph translated into English. The reverse process will be used with the English papers. Spanish and Portuguese stenographers will be present to record the discussions in the language of the authors

The Congress is open to any ophthalmologist who wishes to register. Nonmembers of the Academy of Ophthalmology and Otolaryngology may register regardless of attendance at the Academy meeting. Proper individual invitations have been sent to about 1,800 members of the ophthalmologic profession in the Latin American countries, as well as to the national societies of eye specialists and the universities. Individual invitations were not sent to ophthalmologists in the United States and Canada, but official invitations to them are being printed in the various journals of ophthalmology. A fee of \$5.00 has been set for membership in the Congress

Among the guests expected for the Congress is Dr. Manuel Marquez y Rodriguez, for many years a prominent eye specialist, teacher, and writer in Madrid and now living in Mexico City

Hospital News

The Army of Mercy

THE advancing armies that spread death and destruction overseas, piercing our souls with horror at the suffering and distress that they cause, obscure the work of the army of mercy that instantly is mobilized to lessen the toll of death and disablement, remarks an editorial writer in *Hospitals* (Chicago). The work of the army of mercy is infinitely more hazardous than it ever has been before, he adds, yet hospital people do not shrink from the demands of war service. To them there can be in it nothing very much that is new, except the noise and glare of the bombs that accompany work in the war zone. No enemy with machine guns and bombs is more ruthless than disease, and disease they have grimly fought until it is giving way in steady retreat. The spirit in our hospitals is one of combat. There is the excitement of a garrison keyed to the constant strain of keeping an enemy at bay.

Our hospitals, fortresses of defense and of attack against death from disease and injury, have been strengthened through the years until they are powerful strongholds which add immeasurably to our sense of security. The garrisons are trained and organized and are armed with ingenious weapons which aid them in resisting and overpowering the enemy. Ways and means of attack are planned in unison so that the effectiveness of hospitals is multiplied by the interchangeability of ideas and discoveries.

What new service our hospitals may be called upon to render in these fast changing days we do not know, but we do know that they are ready for any service. Ten thousand nurses, representing the nursing profession of the country, in a resolution passed at their annual convention in Philadelphia in the middle of May pledged to the President every assistance they could render in whatever line of duty their services might be needed. Several volunteer ambulance units have already been sent, and more are being organized, for service overseas. Our hospital and medical resources have been evaluated and mapped.

Trained personnel to the number of 800,000 at least are directly concerned with the care of the sick and injured in the hospitals. Of the 120,000 registered physicians in this country, some 90,000 are working in hospitals, and from central records available to the government, collected by the American College of Surgeons, the American Hospital Association, the American Medical Association, and other organizations, we know exactly where to find the specialists who are so important in war service.

Two hundred thousand highly trained graduate nurses, with an additional 80,000 students in our training schools, constitute the nursing resources of the country. Technicians, hospital administrators, and other trained workers in our institutions are supplemented by three-quarters of a million people who are engaged in public health work of various kinds. This is a great army on which we can depend in any emergency.

Engaged in war even in times of peace, our garrisons of doctors, nurses, and other personnel

in our hospitals can be quickly organized for war-time service. They are trained and equipped to help to minimize the human toll of war. That such service may not be required of any of our hospital people we earnestly hope, but prepare for it we must, under the spreading clouds of the world's most terrible conflict.

The "Fifth Column" in the Hospital

In these days we hear much of the "Fifth Column," meaning the enemies within, observes the editor of the *Hospital Reporter and Guide*. This is not new in business, for in many enterprises there have always existed those who put their selfish interests before those of their co-workers and their employers. Fortunately, they are few in number and are easily singled out.

However, the humanitarian aspect of hospital work makes us keep on many of these people, who are generally what might be called the unemployables, as they are troublemakers no matter where they might be.

In hospitals they can foment dissatisfaction among workers with maintenance, salaries, hours of labor, etc. Nurses who constantly agree with unreasonable patients and visitors and doctors who seek causes to complain, without constructiveness in their criticism, can also affect morale in any institution.

Complaints should be "daily bread" to hospital administrators. It is paradoxical that the more they are brought to the Superintendent's attention—provided he takes care of them—the less they become ultimately.

The Fifth Column can do much to make hospital management difficult. However, if everyone knows that a Superintendent welcomes complaints and gives them proper attention, no one will pay attention to the chronic kicker, and his effectiveness is lost.

Sometimes a dissatisfied customer is our best advisor, for he tells us of our shortcomings. A dissatisfied employee will desert the Fifth Column if he is listened to and made to understand.

Newsy Notes

A medical unit that would be ready for speedy mobilization at any call for military service is being organized at Kings County Hospital.

According to Dr. Emanuel Giddings, medical superintendent of the hospital, the corps, one of sixty being formed in hospitals throughout the country, will consist of thirty-two doctors from the institution's visiting staff, ten laymen, and Army representatives. Dr. Henry Moses, director of medicine at the institution, is directing the formation of the unit.

. . .

The Men's Guild of St. Francis Hospital, Poughkeepsie, is forming an emergency hospital unit as part of the national defense and preparedness measures.

Private hospitals are included among the enterprises that are within the scope of the State Labor Relations Act as the result of an interpretation of the law by Supreme Court Justice Algon I Nova.

Justice Nova's decision directly affects Adelphi Hospital, of No 50 Greene Avenue, Brooklyn, but it establishes a precedent that brings private hospitals throughout the State into the field of collective bargaining.

The hospital, owned by Dr H F McChesney, had vigorously opposed an order by the State Labor Relations Board directing it to bargain with the Building Service Employees Union, Local 80, A F of L, fourteen members of which had organized within the hospital.

Justice Nova, however, upheld the board that said that the statute covered labor relations in any field where the objective was the earning of a livelihood on one side and the earning of a profit on the other.

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Greenpoint Hospital, Brooklyn, reports that last year it had 1,045 births without losing a mother.

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More than \$1,000,000 has been paid to date by the Group Hospital Service, Inc., for hospital bills of subscribers and their dependents throughout central and southern New York, Albert M Le Messurier, president, announced.

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Tubercular patients in Fulton County will receive treatment in a new state hospital at Oneonta after the present contract with the Montgomery County Sanatorium expires in September. The saving will be nearly \$7,000 annually, on the basis of twenty patients.

•

Officials of the Oneida County Hospital in Rome and of Broadacres Sanatorium are co-operating on a proposed revision of rates charged noncharity patients in a move to increase operating revenues of the two county institutions and to eliminate overcrowding.

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Miss Palma Ferraro, superintendent of the Leonard Hospital, Troy, was elected president of the Northeastern New York Hospital Association at the annual meeting at the Mary McClellan Hospital, Cambridge. The association is composed of hospital officials and finance officers of the area.

Miss Ferraro succeeds Miss Clara Sinclair, of the Saratoga Hospital. Others named were T T Murray, Memorial Hospital, Albany, vice-president, Miss Rose Q Strait, Glens Falls Hospital, secretary and treasurer.

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Re-establishment of a medical and surgical staff at Oswego Hospital to function under the Board of Trustees appears likely as a result of the appearance of a committee from the Oswego Academy of Medicine before the Board of Trustees in annual session. The committee consisted of Dr K Wood Jarvis and Dr Grover C Elder. They explained to President Willard J Hall and members of the board that the Academy

of Medicine recently had changed its bylaws and that they represented the Academy in expressing the latter's desire to have a permanent medical and surgical staff appointed by the trustees. For several years, the Academy of Medicine has delegated members on a voluntary basis to carry out medical and surgical work in the institution.

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A medical group has been formed to conduct the Parkchester General Hospital, 1425-27 Zerega Avenue, Bronx. The seven story building, with a 180-bed capacity, is to be thoroughly renovated and will have a complete modern equipment. Adjoining the Parkchester development of the Metropolitan Life Insurance Co., its facilities will be equal to all requirements.

•

Dr S S Goldwater, commissioner of hospitals of the city of New York, reports that the surgical services in one of the institutions under his supervision have adopted a rule that "all operative cases of election, excluding emergency cases, must have a record of examination by two members of the visiting staff recommending the operation." Such a rule unquestionably provides an additional safeguard for patients about to undergo elective surgery, gives added protection to the public, and also adds legal and moral support to the judgment of the attending physician, comments the J A M A. The patient, the physician, and the institution would all seem to be benefited by this precautionary measure. Public hospitals especially might well consider the advisability of adopting a similar rule.

•

Dr S S Goldwater, commissioner of hospitals discloses that in his new capacity as president of the Associated Hospital Service of New York he hopes to devise a modification of the three-cents-a-day plan for persons now classified as medically indigent that would relieve the city of the care of 500,000 families annually in the city's hospitals.

Dr Goldwater explained that under his projected plan, 500,000 families "medically indigent" by definition, i.e., with an income of \$900 for individuals and \$1,500 for families, could join the 1,300,000 now enjoying the benefits of the hospital plan. Bringing the premium within the means of these persons, without affecting the status of those already enrolled, Dr Goldwater explained, would be a means of reducing the city's contributions to private hospitals for the care of the indigent and of reducing the overcrowding in the city hospitals.

Improvements

The statement is made in a public address by Archbishop Spellman that improvements and additions to Catholic hospitals in the metropolitan area are in prospect at an estimated cost of \$3,000,000. The first of these, St Vincent's Hospital, Manhattan, has plans for a nine-story addition on Eleventh Street under way.

• • •

A plan is on foot to convert the old brick school building at Whitney Point, Broome County, into a hospital.

Books

Books for review should be sent to the Book Review Department at 1313 Bedford Avenue, Brooklyn, N. Y. Acknowledgment of receipt will be made in these columns and deemed sufficient notification. Selection for review will be based on merit and the interest to our readers.

RECEIVED

Psychological and Neurological Definitions and the Unconscious. By Samuel Kahn, M D Duodecimo of 219 pages Boston, Meador Publishing Co, 1940 Cloth, \$2 00

The Era Key to the U S P XI & N F VI. Fifth edition revised by Lyman D Fonda. 16 mo of 320 pages Newark, The Haynes & George Co, 1939 Cloth, \$1 00

Medical Diseases of War By Sir Arthur Hurst, M A Octavo of 327 pages Baltimore, Williams & Wilkins Co, 1940 Cloth, \$5 50

Psychology and Psychotherapy By William Brown, M D Fourth edition. Octavo of 260 pages Baltimore, Williams & Wilkins Co 1940 Cloth, \$4.75

Textbook of Public Health. (Formerly Hope and Stallybrass) By W M Frazer, M D, and C O Stallybrass, M D Tenth edition Octavo of 504 pages, illustrated Baltimore, Williams and Wilkins Co, 1940 Cloth, \$6 50

The Surgery of the Alimentary Tract By Sir Hugh Devine, F.A.C.S Octavo of 1,046 pages, illustrated. Baltimore, Williams & Wilkins Co, 1940 Cloth, \$15

A Textbook of Physiology By William H Howell, M D Fourteenth edition Octavo of 1,117 pages, illustrated. Philadelphia, W B Saunders Co, 1940 Cloth, \$7 50

Clinical Diabetes Mellitus and Hyperinsulinism. By Russell M Wilder, M D Octavo of 459 pages, illustrated. Philadelphia, W B Saunders Co, 1940 Cloth, \$6 00

Immune-Blood Therapy of Tuberculosis. With Special References to Latent and Masked Tuberculosis By Joseph Hollos, M D Octavo of 195 pages, illustrated Boston, Bruce Humphries, Inc., 1938 Cloth, \$2 50

The Public Health Nurse and Her Patient. By Ruth Gilbert. Octavo of 396 pages New York, The Commonwealth Fund, 1940 Cloth, \$2.25

Modern Dermatology and Syphilology By S. William Becker, M D, and Maximilian E Obermayer, M D Quarto of 871 pages, illustrated Philadelphia, J B Lippincott Co, 1940 Cloth, \$12

Synopsis of the Principles of Surgery By Jacob K. Berman, M D Duodecimo of 615 pages, illustrated. St Louis, C V Mosby Co, 1940 Cloth, \$5 00

Artificial Pneumothorax. Its Practical Application in the Treatment of Pulmonary Tuberculosis Contributions by Saranac Lake Physicians to the Studies of the Trudeau Foundation. Editorial Committee, Edward N Packard, M D, John N Hayes, M D, Sidney F Blanchet, M D Octavo of 300 pages, illustrated Philadelphia, Lea & Febiger, 1940 Cloth, \$4 00

Obstetrics and Gynecology By the Departmental Staff of the University of Chicago and Other Contributors Edited by Fred L Adair,

M D Volumes I and II Octavo, illustrated Philadelphia, Lea & Febiger, 1940 Cloth, \$20 per set

The Emperor's Itch. The Legend Concerning Napoleon's Affliction with Scabies By Reuben Friedman, M D Octavo of 82 pages, illustrated New York, Froben Press, 1940 Cloth, \$1 50

Graduate Medical Education. Report of the Commission on Graduate Medical Education Octavo of 304 pages Chicago, Commission on Graduate Medical Education, 60 E Scott Street, 1940 Cloth.

Observations Made During the Epidemic of Measles on the Faroe Islands in the Year 1846 By Peter Ludwig Panum, M D (Translated from the Danish by Ada S Hatcher) with a Biographical Memoir by Julius Jacob Petersen, M D (Translated from the Danish by Joseph Dimont) Octavo of 111 pages Delta Omega Society Distributed through American Public Health Association, New York, 1940 Cloth

The Poison Trail By William F Boos, M D Octavo of 380 pages New York, Hale, Cushman & Flint through the American Can Company, 1939 Cloth, \$3 00

The Bacteriology of Public Health. By George M Cameron, Ph.D Octavo of 451 pages, illustrated St Louis, C V Mosby Co, 1940 Cloth \$3 50

Frank Howard Lahey Birthday Volume, June First, Nineteen Hundred Forty Octavo of 466 pages, illustrated. Springfield, Charles C Thomas, 1940 Cloth

Gynecological and Obstetrical Pathology With Clinical and Endocrine Relations By Emil Novak, M D Octavo of 496 pages, illustrated Philadelphia, W B Saunders Co, 1940 Cloth

Clinical Practice in Infectious Diseases For Students Practitioners and Medical Officers By E H R. Harries M D, and M Mitman, M D Octavo of 463 pages, illustrated Baltimore, Williams & Wilkins Co 1940 Cloth \$6 00

Physiology of Micturition By Orthello R Langworthy, Lawrence C Kolb, and Lloyd G Lewis Octavo of 232 pages, illustrated Baltimore, Williams & Wilkins Co, 1940 Cloth \$3 50

Report on the Sex Question. By The Swedish Population Commission Translated and edited by Virginia C. Hamilton, M D Octavo of 182 pages Baltimore, Williams & Wilkins Co 1940 Cloth, \$2 00

The International Medical Annual A Year Book of Treatment and Practitioner's Index Edited by H Letheby Tidy, M D, and A Rendle Short, M D Fifty-eighth Year Octavo of 545 pages illustrated Baltimore, Williams and Wilkins Co, 1940 Cloth \$6 00

Diseases of the Digestive System. A Text-

Private hospitals are included among the enterprises that are within the scope of the State Labor Relations Act as the result of an interpretation of the law by Supreme Court Justice Algeron I Nova.

Justice Nova's decision directly affects Adelphi Hospital, of No 50 Greene Avenue, Brooklyn, but it establishes a precedent that brings private hospitals throughout the State into the field of collective bargaining.

The hospital, owned by Dr H F McChesney, had vigorously opposed an order by the State Labor Relations Board directing it to bargain with the Building Service Employees Union, Local 80, A. F. of L., fourteen members of which had organized within the hospital.

Justice Nova, however, upheld the board that said that the statute covered labor relations in any field where the objective was the earning of a livelihood on one side and the earning of a profit on the other.

Greenpoint Hospital, Brooklyn, reports that last year it had 1,045 births without losing a mother.

More than \$1,000,000 has been paid to date by the Group Hospital Service, Inc., for hospital bills of subscribers and their dependents throughout central and southern New York, Albert M. Le Messurier, president, announced.

Tubercular patients in Fulton County will receive treatment in a new state hospital at Oneonta after the present contract with the Montgomery County Sanatorium expires in September. The saving will be nearly \$7,000 annually, on the basis of twenty patients.

Officials of the Oneida County Hospital in Rome and of Broadacres Sanatorium are co-operating on a proposed revision of rates charged noncharity patients in a move to increase operating revenues of the two county institutions and to eliminate overcrowding.

Miss Palma Ferraro, superintendent of the Leonard Hospital, Troy, was elected president of the Northeastern New York Hospital Association at the annual meeting at the Mary McClellan Hospital, Cambridge. The association is composed of hospital officials and finance officers of the area.

Miss Ferraro succeeds Miss Clara Sinclair, of the Saratoga Hospital. Others named were T. T. Murray, Memorial Hospital, Albany, vice-president, Miss Rose Q. Strait, Glens Falls Hospital, secretary and treasurer.

Re-establishment of a medical and surgical staff at Oswego Hospital to function under the Board of Trustees appears likely as a result of the appearance of a committee from the Oswego Academy of Medicine before the Board of Trustees in annual session. The committee consisted of Dr K. Wood Jarvis and Dr Grover C. Elder. They explained to President Willard J. Hall and members of the board that the Academy

of Medicine recently had changed its bylaws and that they represented the Academy in expressing the latter's desire to have a permanent medical and surgical staff appointed by the trustees. For several years, the Academy of Medicine has delegated members on a voluntary basis to carry out medical and surgical work in the institution.

A medical group has been formed to conduct the Parkchester General Hospital, 1425-27 Zerega Avenue, Bronx. The seven-story building, with a 180-bed capacity, is to be thoroughly renovated and will have a complete modern equipment. Adjoining the Parkchester development of the Metropolitan Life Insurance Co., its facilities will be equal to all requirements.

Dr S. S. Goldwater, commissioner of hospitals of the city of New York, reports that the surgical services in one of the institutions under his supervision have adopted a rule that "all operative cases of election, excluding emergency cases, must have a record of examination by two members of the visiting staff recommending the operation." Such a rule unquestionably provides an additional safeguard for patients about to undergo elective surgery, gives added protection to the public, and also adds legal and moral support to the judgment of the attending physician, comments the J. A. M. A. The patient, the physician, and the institution would all seem to be benefited by this precautionary measure. Public hospitals especially might well consider the advisability of adopting a similar rule.

Dr S. S. Goldwater, commissioner of hospitals, discloses that in his new capacity as president of the Associated Hospital Service of New York he hopes to devise a modification of the three-cent-a-day plan for persons now classified as medically indigent that would relieve the city of the care of 500,000 families annually in the city's hospitals.

Dr Goldwater explained that under his projected plan, 500,000 families "medically indigent" by definition, i. e., with an income of \$900 for individuals and \$1,500 for families, could join the 1,300,000 now enjoying the benefits of the hospital plan. Bringing the premium within the means of these persons, without affecting the status of those already enrolled, Dr Goldwater explained, would be a means of reducing the city's contributions to private hospitals for the care of the indigent and of reducing the overcrowding in the city hospitals.

Improvements

The statement is made in a public address by Archbishop Spellman that improvements and additions to Catholic hospitals in the metropolitan area are in prospect at an estimated cost of \$3,000,000. The first of these, St. Vincent's Hospital, Manhattan, has plans for a nine-story addition on Eleventh Street under way.

A plan is on foot to convert the old brick school building at Whitney Point, Broome County, into a hospital.

est utility to the general practitioner, but the specialist, too, must familiarize himself with other specialties in other fields. There are eleven specialties presented, no one of which is too lengthy. The illustrations are good and the advantages of the loose-leaf system will keep the reader apprised of newer additions as they are developed. The following specialties are offered: (1) Ophthalmology, (2) Diseases of the Ear, Nose, and Throat, (3) Neurology, (4) Psychiatry, (5) Vitamins and Vitamin Deficiency Diseases, (6) Allergy, (7) Orthopedic Surgery, (8) Obstetrics and Gynecology, (9) Endocrinology, (10) Urology, (11) Proctology. Dermatology and Syphilology are in preparation. These volumes can be highly commended both to general practitioner and specialist.

MAURICE J DATTELBAUM

Physiological Chemistry A Textbook for Students. By Albert P Mathews Ph.D. Sixth edition. Octavo of 1,488 pages, illustrated. Baltimore, Williams & Wilkins Co., 1939. Cloth, \$8.00.

Now in its sixth edition this book represents a complete textbook of biochemistry. It is interesting to note that the textual matter is devoted as much to the physiology of metabolism and nutrition as it is to biochemistry. There is justification for this combination because these two fields are so closely related. Part I is purely physiological chemistry and is devoted to the chemistry of nutritional components. There is also a large chapter on the physical chemistry of protoplasm. Part II is largely the physiology of metabolism and consists of chapters on energy exchange, absorption, digestion, blood respiratory system, nervous system, excretory system and the endocrines.

It is an authoritative book and should maintain its position as a reference work in the physician's library.

WILLIAM S COLLENS

Diagnostic Signs, Reflexes and Syndromes Standardized By William E Robertson, M.D., and Harold F Robertson, M.D. Duodecimo of 109 pages. Philadelphia F A Davis Co., 1939. Cloth, \$3.50.

The publication of this extraordinary little book by the Robertsons will be a great boon to anyone who has read of so-and-so's sign or syndrome without being able to identify it further. The use of the descriptive proper name in medicine has been a mixed blessing. The attachment of a name to a medical condition has served often, to be sure, to keep alive the name of a great pioneer who deserved to be so honored and whose name might otherwise be relegated to comparative oblivion. It is often true that unless his name is attached to some disease, a celebrated scientist will be remembered only by the historian, or, even if he is so distinguished, his other contributions may be forgotten. A pertinent example is the name of Jacob Henle, associated always with Henle's loop and seldom with monumental contributions to the subject of contagion.

We honor the great but often confuse the little by the use of the proper name. "Ayerza's disease" has come to have many meanings to many

minds, and we are still struggling to get a coherent picture of this group of diseases. On the other hand, in rare instances, the original work of some scientist has been so thorough and so definitive that it would be an effrontery to think of changing a name. Addison's disease instantly comes to mind in this connection. Occasionally too, the etiology, pathogenesis, and true nature of a disease complex is so obscure, as in Hodgkin's disease, that the best interests of scientific thinking are served by retaining the original title.

The attempt to attach a man's name to a condition easily described otherwise has sometimes given rise to a deplorable exhibition of medical nationalism. There is no sensible reason why exophthalmic goiter should be known in different countries by the names of Graves, Basedow, Begbie, Marsh, Parry, Parson, and Flajani. There can be no doubt that this practice is falling into disuse, but even today confusion has arisen from misguided attempts to attach the names of men to clinical descriptions. Adie and Crohn have performed great services for medicine, but nothing is gained by the use of their names to describe certain lesions.

Only a few omissions could be found in a rather careful study of the book. The Babinski-ski-Vacquez syndrome is sometimes known as that of Babinski-Vacquez. The phenomenon of Hill and Flack might be mentioned. Goldstein's toe sign, Bouyeret's syndrome (in the sense of paroxysmal tachycardia), and Gordon's cardiac sign should be listed in the next edition. The Robertsons have been thorough and trustworthy.

MILTON PLOTZ

Stedman's Practical Medical Dictionary By Thomas L Stedman M.D. and Stanley T Garber M.D. Fourteenth edition. Octavo of 1,303 pages illustrated. Baltimore, Williams & Wilkins Co., 1939. Cloth with thumb index, \$7.50.

The excellent Stedman dictionary is now in its fourteenth edition. A sensible change has been in the reduction of the number of illustrations. It has always been a source of mystery why so many are included in dictionaries where they do not belong. Even in this edition, there are far too many. There is no good reason for example for an illustration of Einhorn's saccharimeter on page 341.

MILTON PLOTZ

Gould's Pocket Pronouncing Medical Dictionary By the late George M Gould, M.D. Eleventh edition revised by C V Brownlow. 16mo. Philadelphia, P Blakiston's Son & Company 1939. Cloth, \$2.00.

Gould's Pocket Medical Dictionary continues to be as sound and as valuable in its eleventh as in previous editions.

MILTON PLOTZ

Cardiovascular-Renal Disease A Clinico-pathologic Correlation Study Emphasizing the Importance of Ophthalmoscopy. By Lawrence W Smith, M.D., Edward Weiss, M.D., and others. Quarto of 227 pages illustrated. New York D Appleton-Century Co 1940. Cloth \$4.50.

book for Students and Practitioners By Eugene Rosenthal, M D Octavo of 394 pages, illus-

trated St. Louis, C V Mosby Co, 1940 Cloth, \$8 50

REVIEWED

The International Medical Annual A Year Book of Treatment and Practitioner's Index. Edited by H Letheby Tidy, M D, and A Rendle Short, M D Fifty-eighth Year Octavo of 545 pages, illustrated Baltimore, Williams & Wilkins Co, 1940 Cloth, \$6 00

The latest volume of this annual is like its predecessors, a valuable review of progress during the year in all branches of medicine and surgery. The organization of material selected and the method of indexing make the subject matter readily accessible. Numerous illustrations reproduced from abstracted articles enhance the value of the volume to the reader. Most of the world's leading medical periodicals are well represented, and it is gratifying to note that, as a reflection of the extent of progress being made by American medicine, journals from this country seem to have contributed an unusually large number of the articles selected.

MILTON PLOTZ

Psychobiology and Psychiatry A Textbook of Normal and Abnormal Human Behavior. By Wendell Muncie, M D Octavo of 739 pages, illustrated St. Louis, C V Mosby Co, 1939 Cloth, \$8 00

The present volume ably continues in the approach to psychiatry traditional with the psychobiologic views elaborated by Adolf Meyer. It is primarily organized for the use of the student beginning his inquiry into psychiatry, and the technic of presentation is substantially that employed at the School of Medicine at Johns Hopkins University. An introspective appraisal of the student's own personality dynamics and his liabilities and assets from the physiologic and psychologic points of view is made the starting point of the study of psychiatry. A complete outline of the crucial epochs of his maturation is formulated in such a manner as to objectify it for the purpose of estimating the ranges within which "normal" may be said to vary. Comparable studies of friends, schoolmates, etc., are used to supplement this appraisal. The book is well organized, and its outlines are effectually self-consistent for this purpose. There are numerous excellent graphs and illustrations. Electroencephalography is considered as a new technic contributing to the study of normal personality processes and their aberration. The materials of psychiatry proper are considered under organic and functional divisions, although the author makes it evident that the distinctions classically drawn between the two are uncertain indeed. As elsewhere represented by students of Adolf Meyer, little emphasis is placed upon efforts to categorize personality disturbances, and no rigid pattern of interpretation or of therapy is insisted upon. When convenient, the concepts traditionally discovered in orthopsychiatry, psychoanalysis, analytic psychology, and the various "suggestion" schools are appealed to. A wholesome finding is the emphasis placed upon the basic work of the experimental psychologist in de-

lineating the nature and modifiability of "drives" and mechanisms.

The single reservation that one may make in reviewing the book is that "psychobiology" is itself more than a school of psychopathology.

Some issue may be taken with those who regard it as the discipline basic to psychiatry, in the sense for example, that relates chemistry, physics, and biology to medicine. The volume can be wholeheartedly recommended for the student, practitioner, and teacher of psychiatry and abnormal psychology.

RUSSELL MEYERS

Atlas of Surgical Operations By Elliott C. Cutler and Robert Zollinger Folio of 181 pages, illustrated New York, The Macmillan Co, 1939 Cloth \$8 00

This book is a collection of 84 charts, 8 1/2 X 12 1/2 inches illustrating, with black and white drawings, a great variety of surgical operations. The charts are to the right, and on the pages opposite the drawings are a reasonably complete description of the technic pictured. Because of the size of the charts, nine and more drawings, some, of course, only of details, are found on one page. There are three introductory chapters of text on surgical technic, anesthesia, and preoperative and postoperative care.

The book is dedicated to the interns and residents of the Lakeside and the Peter Bent Brigham hospitals in the hope that such men there and elsewhere may find in this book a convenient and adequate visual demonstration of the technic of the various operations that are performed in a large clinic. By the same token, it would seem that such a scheme should have an equal appeal to all surgical assistants and others beginning their surgical experience. The excellent illustrations, which are, of course, the basis of the Atlas, are by Mildred B. Coddington.

J. RAPHAEL

Specialties in Medical Practice Edited by Edgar Van Nuys Allen, M D Volumes I and II Quarto of 934 pages, illustrated New York Thomas Nelson & Sons, 1940 Cloth, \$25 per set.

The editors, in their introduction and the foreword by Dr. Donald C. Balfour, present the reader with reasons for these practical volumes. Few clinicians are experienced in the diagnosis and treatment of disease cared for by the specialists. In the hospital and in the clinic the situation is solved by reference to specialists and by ready transfer of information from specialist to specialist. In private practice the situation is different, for the general practitioner cannot refer most of his patients to specialists. The general practitioner and diagnostician whom most patients consult must administer to the simplest needs of many patients whose illness, if more complex, would require the care of a specialist.

In the foreword the distinction between graduate and postgraduate medical education is clearly expressed. This work will prove of great-

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WENDELL L. WILLKIE
100 LAST 12TH STREET
NEW YORK CITY

Colorado Springs
August 7, 1940

My dear Doctor -

You have asked my views on socialized
medicine. I am against it. You can quote me
any place on this.

Cordially yours, .

Dr. T. Leon Howard
Denver, Colorado.

The *Rocky Mountain Medical Journal* for September, 1940, prints
the above letter to Dr T Leon Howard, of Denver, Colorado

Smith and his associates have performed a difficult task extremely well. They have handled a complex and baffling clinical group of diseases with enlightened common sense. There are illustrative tables and case reports. Numerous photographs of gross and microscopic pathologic material illuminate the text, and there are superb studies of the retinal changes. A special word of praise should be given the diagrams accompanying the fundus studies. No attempt is made to be encyclopedic, but there is a useful bibliography.

MILTON PLOTZ

Proctoscopic Examination and Diagnosis and Treatment of Diarrheas. By M H Streicher, M D. Octavo of 149 pages, illustrated. Springfield, Charles C Thomas, 1940. Cloth, \$3 00.

The reviewer feels that any effort which promotes proper, systematic anorectal examinations—especially proctoscopic examinations—is worth while. Only by such examination will lesions of the anus and rectum be discovered early.

The first twenty pages of this small book deal with proctoscopic examinations. It is the reviewer's opinion that the choice of some of the instruments described and illustrated could be improved upon. Some of the illustrations, such as anoscopes, the position of the Hanes table, and the McKimney light, are presented in a way which might baffle and confuse the uninitiated.

On page 15 the author speaks of "itching in rectum." The reviewer has never heard of pruritus recti, but he has encountered itching in the anus as well as all areas of the skin.

The remainder of the book, about 100 pages, consists of a brief consideration of the diagnosis and treatment of diarrheas. More than an outline could not be expected in a book of this size. On pages 39 and 40 there is an excellent classification of diarrheas (etiologic).

A W MARTIN MARINO

Diagnosis and Treatment of Diseases of the Hair. By Lee McCarthy, M D. Octavo of 671 pages, illustrated. St Louis, C V Mosby Co., 1940. Cloth, \$9 50.

There is such a scarcity of good books written in English on diseases of the hair that it is indeed a pleasure to welcome Dr Lee McCarthy's book on the diagnosis and treatment of the diseases of the hair and scalp. This treatise contains 291 illustrations, an exceptionally rich bibliography, and a complete index. It is printed in easily readable type. Included in the illustrations is a large number on histopathology of the hair and surrounding tissues, many taken from the author's own book, *Histopathology of Skin Diseases*. This angle of hair diseases is especially stressed and adds much to the value of the book.

The subject matter in general is presented in a thorough manner. For example, his discussion on the alopecias alone covers almost 100 pages. He gives a minute classification of the alopecias, describes all various forms, and gives detailed instruction as to treatment, including individual prescriptions. All in all, this volume is very complete, and dermatologists as well as general practitioners will find it a valuable addition to their library.

ABRAHAM WALZER

Illustrations of Bandaging and First-Aid. Compiled by Lois Oakes, D N. Octavo of 248 pages, illustrated. Baltimore, Williams & Wilkins Co., 1940. Cloth, \$2 00.

The purpose of this little book is set forth in a well-illustrated manner. The basic principles of bandaging are amply covered. The book contains four sections: two sections on bandaging, triangular and roller, one on first aid in hemorrhage, and one on first aid in fractures. It is brief, concise, and mostly photographic.

It is written by Lois Oakes, a registered nurse of Great Britain. Though compiled primarily for first aid in war nursing, the book can be well utilized in this country by nurses in the industrial field, Boy Scouts, Girl Scouts, Camp Fire Girls, and similar groups.

Miss Oakes's book meets the purpose in that it is written for nurses and first-aid students. It can be heartily recommended as a primer for this type of nursing.

LOUIS BERGER

Manual of Cardiology. Clinical Methods and Case Histories as Problems for Study. By William D Reid, M D. Octavo of 364 pages. New York, Oxford University Press, 1940. Cloth, \$3 50.

As the author states in the preface, the book is not designed as a textbook of cardiology but as a supplement to recognized textbooks. It is designed primarily for students, and the information that it contains is sound and would be subscribed to by most cardiologists. It contains many commonsense facts on cardiology which the medical student and practitioner ought to know. The second section is devoted to case histories, and the student is asked different questions on them, the author's answers being given at the end of the book. The student who has familiarized himself with the textbook facts on the subject will find in this book useful additions to his knowledge.

J HAMILTON CRAWFORD

Infections of the Hand. By Lionel R. Fifield, F R C S. Second edition by Patrick Clarkson, F R C S. Duodecimo of 167 pages, illustrated. New York, Paul B Hoeber, Inc., 1939. Cloth, \$3 25.

In the preparation of the second edition, the author, like Fifield, borrowed extensively from the classic text of Kanavel on the same subject. The essential anatomy obtained by dissection, the study of cross sections, and operative findings are presented, but in the interest of simplification detailed anatomical data are, happily, not included. Clarifying illustrations are frequently interspersed.

There is an enlightening chapter on prophylaxis of hand infections and other chapters on the more common infections—whitlow, palmar infections, osteomyelitis, etc. Treatment and the avoidance of complications are given full and adequate consideration. Accounts of the use of sulfonamides are given, and a valuable section on insurance aspects has been included. This revised edition should prove fully as valuable as the first, which rightfully had a wide acceptance.

ARTHUR GOETSCHE

put that on the cap also. The butterfat content of the single grade milk is 33 per cent compared with the 3 per cent minimum for the old Grade B. The required bacterial count after pasteurization for the new Approved milk is 30,000, the same as that formerly required for Grade A. There seems to be nothing in the new law to prevent the sale of milk with higher butterfat content than the minimum 33 per cent or higher quality milks under special designations branded in the bottles or on other types of containers.

The interest of physicians in the milk question has always been a lively one, frequently carried to the point of bitterness in the public interest over the more controversial aspects of the problem of securing a safe and wholesome product. The grading of milk has been based on considerations of private and public health only, since 1911 when grading was first established. Pasteurization, when this became commercially practicable, seemed to assure safety but was no guarantee of purity or cleanliness. Dairy and herd inspection and tuberculin testing marked still further advances. Rapid motor transport, glass-lined tanks, temperature control, improvements in the health departments in the milk shed, all have added to the public safety in better handling and distribution.

The fact that New York City has not had an epidemic of milk-borne disease in twenty-eight years under the former grading practice in a child population, under 5 years of age, of around 500,000 should indicate that the methods of milk production, control, and distribution had been adequate from a public health point of view.

There is nothing in the new regulations that forbids any dealer or group of dealers offering for sale a milk produced and marketed under more severe restrictions than those required by the Sanitary Code and labeling it by any term that is not false or misleading. Progress toward still cleaner and better protected milk should not be impeded by any consideration whatsoever. The present standards of safety, cleanliness, and protection were made possible only by a continuous struggle against complaisance, ignorance, and greed. But it should not be assumed that perfection has been attained. If physicians, producers, and consumers demand a milk of lower bacterial count (therefore cleaner) it should be met even though it must be marketed at 2 cents or more above the price of Approved milk.

The new law affects chiefly the economics of milk production and marketing, it seems to effect a simplification in grading which may be in the public interest. Its effect upon the retail price should be kept under careful scrutiny. Simplification and cheapness must not be permitted to discourage sanitary production. The operation and effect of the new law should be studied carefully as statistical data become available. Milder social and economic theories, there should be no interference with honest efforts of producers on

This was in direct answer to a query by Dr Howard as to the Republican candidate's views on state medicine. Of refreshing brevity and sincerity, the statement will be welcomed thankfully by the medical profession of the nation, long weary of excessive verbiage, indirection, "sounding brass, and tinkling cymbals." The profession will also be glad to learn that the enterprising *Rocky Mountain Medical Journal* has offered the Democratic candidate an equal opportunity to state his views on the same question in its October issue, to which statement we shall look forward with interest in the light of the last eight years' experience and in apprehension of the possibilities of the next duodecade. It would be interesting to know also the views of the Congressional candidates on this question before November.

Approved Milk

Only one grade of milk is now officially recognized by the Board of Health in New York City (this since September 1), "Approved Milk," with the exception that Certified milk will continue to be marketed as before but, as this category comprises only 0.3 of 1 per cent of the total volume, it may be disregarded for purposes of this discussion. On June 11, 1940, after considerable study by the New York City Health Department and its consultants and several months of hearings with producers, milk distributors, and representatives of the consuming public, the Board of Health adopted amendments to the City's Sanitary Code which abandoned the former method of grading milk in New York City and provided for one set of standards for all milk—except Certified milk. "For the past decade the sanitary quality of the Grade B milk supply in New York City," said Health Commissioner John L. Rice, "has improved to such an extent that we now know it is all safe and wholesome, and there is no compelling public health reason for continuing to provide for two grades of milk in the Sanitary Code." The standards defined for Approved milk are better than those required formerly for Grade B and in some respects comparable to those required formerly for Grade A. For detailed historical review of the New York City milk question, we have published in the September 1 issue a special article, "New York City Milk," by Dr Charles E. North.

A feature of the new law is the improved, required milk bottle caps upon which will appear only the two words "Approved Milk," identification of dealer or source, date of pasteurization or day of week, and Department of Health, New York City, but no other indication of grade or quality will appear on the cap unless 4.2 per cent or more of butterfat is claimed, in which case the dealer may

OBSERVATIONS ON PROLONGED HUMAN REFRIGERATION

TEMPLE FAY, M D , F A C S , Philadelphia

(Professor and Head of the Departments of Neurology and Neurosurgery, Temple University Medical School)

WITH the continued biopsy evidence that degenerative changes could be produced to a marked degree by local refrigeration at temperatures between 40 and 50 F, as reported by Smith and myself,¹ it was natural that attempts should be made to reach the deep structures, which, of course, were not influenced by local application of cold. In October, 1938, one of our patients (E G) showed remarkable response to local refrigeration throughout an ulcerating breast carcinoma. The breast area was practically cleared of carcinoma cells after five months of local refrigeration, and the metastatic lesions in the neck decreased in size under an ice coil about this part. There was, however, deep involvement of the vertebral structures, as well as evidence of metastasis to the brain. The hopeless character of the case and the continued progress of these lesions out of reach of local refrigeration led to the final determination to place the entire patient at a temperature level similar to that enjoyed by the extremities, namely, between 88 and 90 F.² It was reasoned that if the extremities could survive at this temperature it was possible that other organs of the body might find some similar means of adjustment.

In spite of the teaching and convictions to the contrary and in spite of the fact that no previous reports could be found in the literature where human beings had been capable of surviving for prolonged periods of time body temperatures in this subnormal range, nevertheless, it seemed justifiable to take this unknown risk in the hopes of influencing the deep metastatic lesions. I may say that for several weeks prior to this first induction of refrigeration, each time a determination to

carry out the plan was brought to the point of application fear of the unknown possibilities and the physiologic teachings of the past, which had indicated that human beings could not long survive at temperatures below 95 F, were responsible for my delaying this procedure until late in November, 1938. However, the patient's condition was continuing to grow worse. A short initial observation was finally determined upon. The patient was given avertin anesthesia, the trunk and legs were packed in cracked ice, and, with the assistance of the cold weather at that time of the year, the windows of the room were opened, permitting the patient's body temperature to be rapidly lowered to 90 F (rectal). The sedative effect of the avertin plus amytol maintained the patient throughout the first eighteen hours without discomfort or knowledge of the procedure. Within the first twelve hours the blood pressure gradually disappeared and the pulse disappeared from the periphery. Breathing, which remained slow, shallow, and regular, was the only clinical finding that seemed to offer reassurance. Because of the prolonged absence of pulse and blood pressure and the fear of cerebral anoxia, it was decided to bring the patient back to normal temperature values again. Heat was applied to the body surfaces and a hot coffee enema was given. Within a few hours the patient had returned again to conscious levels and was not aware of the experience through which she had been taken.

Subsequent inductions of refrigeration were made until we had maintained a period of four days at 90 F (rectal). Suppression of tears and urine and cessation of gastrointestinal activity were ob-

Read by invitation at the Annual Meeting of the Medical Society of the State of New York, New York City, May 7, 1940

recommendation of the medical profession to supply, through ordinary commercial channels, a milk with lower bacterial count as a result of more frequent veterinarian and laboratory safeguards. The right of the public to pay a bonus price for the encouragement of higher standards of quality must not be infringed.

Hans Zinsser

In the passing of Hans Zinsser, professor, at the time of his death, of bacteriology and immunology at the Harvard Medical School, American medicine salutes an indefatigable worker, an inspiring teacher, a successful author, and a most lovable personality.

A graduate of Columbia University in 1899 in the class of the present managing editor of this JOURNAL, he received his medical degree from the College of Physicians and Surgeons in 1903.

His fame as a research bacteriologist grew world wide as he rose rapidly in his profession, serving as intern at Roosevelt Hospital, instructor at the College of Physicians and Surgeons, pathologist at St. Luke's Hospital, then going for three years to California as assistant professor

of bacteriology at Leland Stanford University. He returned to New York as a full professor at Columbia. He remained at Columbia from 1913 to 1923, when he went to the Harvard Medical School, where until his death he was the Charles Wilder Professor of Bacteriology and Immunology.

During the World War, after his expedition to Serbia as a representative of the American Red Cross, he was a colonel in the Medical Corps of the A. E. F. He received the Distinguished Service Medal.

In June, 1939, he received honorary degrees of Doctor of Science from both Harvard and Yale. He also held honorary degrees from Columbia, Western Reserve University, and Lehigh University. He has earned his rest.

GUY SEXTON CARPENTER

On August 28, 1940, Dr. Guy S. Carpenter, chairman of the Publicity Division of the Council Committee on Publication and a member of the Committee on Arrangements of the Council Committee on Scientific Assembly of the Medical Society of the State of New York, died suddenly of cerebral disease at his home in Waverly, New York.

His service to the Society, especially in his capacity as director of the Committee on Medical Publicity, was of the greatest value. His calm and humorous outlook on life which endeared him to all who knew him directed the policy of the Society's medical publicity in its formative period to the benefit of the public and laid the solid foundations upon which this branch of the Society's educational activities has subsequently been built. His loss will be keenly felt, but his work and influence will carry on.

Born in 1874, he was graduated with the degree of Doctor of Medicine from Cornell University in 1899. He has been a member of the Tioga County Medical Society and the Medical Society of the State of New York since 1906. He was also a Fellow of the American Medical Association. He was a member of the American Public Health Association, the New York Society of Anesthetists, and the Associated Anesthetists of the United States and Canada.

In May, 1937, he was elected a Councilor of the State Society for a term of one year and in May, 1938, was re-elected for a term of three years. In June, 1938, he was appointed chairman of the Council Committee on Medical Publicity and in April, 1939, was elected a delegate to the American Medical Association for two years. He was a member of the staff of the People's Hospital of Sayre, Pennsylvania, as attending physician from 1916 to 1930, he served also on the staff of the Tioga County General Hospital, Waverly, New York, from 1932 to the date of his demise.

should be avoided as it makes the retention of temperature at the desired level more difficult. The eyes should be carefully protected with vaseline gauze. No food need be given during the period of refrigeration—even up to five days. It has been our practice, recently, to permit the introduction of small amounts of saline from time to time, in view of the evidence of blood concentration and some shift of water balance. Renal activity may be present if fluids are administered in quantities sufficient to require excretion. Renal activity may also be initiated by restlessness and conscious levels of the patient. The early observations of anuria, we feel, may have been primarily due to the amount of general anesthetic and sedative given to the patient during the refrigeration period. Blood pressures and pulses are obtainable with the patient at conscious levels during the refrigeration phase. We have been in the habit of giving a moderate dose of paraldehyde just prior to bringing the patient back to normal temperature levels, thus inducing a period of sedation and partial sleep in order to avoid discomfort and restlessness as circulation returns to the periphery.

It is remarkable to note that sedation is less and less required as the temperature is maintained at lower levels. Once the induction has been obtained and the desired temperature of 88 to 90 F has been established, the patient goes along in a semisleep with little sedation required and can be easily aroused but quickly drifts back into a somnolent stage. As yet we have been unable to answer the questions relative to many of the points of interest in physiology, although we have scattered observations regarding blood counts, urea, urinary findings, and certain blood chemistry determinations.

One of the most constant and gratifying results of generalized refrigeration is the relief of pain enjoyed by the patient after return to normal body temperatures. Where deep metastatic involvement has required large doses of narcotics, withdrawal of all sedation has been possible and spontaneous relief of pain has oc-

curred for periods of two days up to five months.

The object of our observations, however, has been to maintain as constantly as possible a rectal temperature of around 88 to 90 F to determine whether or not the entire body can survive at the temperature level of the arms and legs. It was found that disturbing factors concerned with taking blood counts or obtaining blood chemistry or any measures that might disturb or produce painful reaction in the patient caused a period of semiwakefulness followed by restlessness, which made it difficult to maintain the rectal temperature at the constant level that these observations required.

It must be recalled that the objective has been to maintain the entire body at a temperature between 88 and 90 F to test the theory that the infrequency of metastases below the elbows and knees may in part be due to the reduced temperature of the extremities below the elbows and the knees. We believe 90 F to be the upper boundary of "critical temperature" where biopsy studies have shown absence of mitoses in areas of carcinoma. We have sought to establish an upper level of safety for generalized refrigeration as well as the effect of subcritical reduced temperatures on undifferentiated cell growth, realizing that the temperature field lying below 80 and above 40 F gives more rapid and more profound regressive effects. The longest period of refrigeration in the human being, in our experience, has been eight days, at a temperature of 88 to 90 F (rectal). The lowest rectal temperature reached has been 74 F.

In this instance a hopeless and emaciated patient was maintained at this level in the hopes of establishing more profound effects upon widespread metastatic carcinoma involving the abdominal structures and primary in the colon. Death occurred at a level of 74 F (rectal) after four hours of this temperature induction. This and one other instance of death during refrigeration marked the only fatal experiences encountered during the actual state of refrigeration. It must be recalled that only hopeless and terminal

served during many hours. As these observations continued, we realized that there were practically no physiologic criteria upon which we could determine or predict the reactions of the patient. When renal activity ceased for as long as three days, anxieties naturally arose regarding the retention of nitrogenous and solid materials in the blood. The blood chemistry studies during the period of refrigeration failed to show a rise in blood urea and, in fact, many of the readings were even *below* normal. The absence of secretion of tears required vaseline gauze dressings to the eyes. In some instances blood pressure could be obtained, but in many it was absent throughout two, three, or four days of refrigeration. With observations now covering more than 100 cases, renal suppression, absence of pulse and blood pressure, and cerebral edema have not occurred since heavy routine sedation has been omitted.

In 3 instances evidence of cerebral edema, following the return of the patient to normal temperature, led to spinal puncture during refrigeration, and in several instances the temperature of the spinal fluid was found to be two and three degrees below that of rectal temperature. For instance, with a rectal temperature of 88 F, spinal fluid temperature might show a level as low as 84 F. In 1 instance 100 cc of spinal fluid was withdrawn, indicating a marked accumulation of subarachnoid fluid during this refrigeration period.

In another instance what appeared to be the cumulative effect of amytol following the recovery of the patient from the period of refrigeration led to respiratory and cerebral symptoms, requiring a change in the combination of sedatives used in the early period of our observations. It was observed that if the patient's temperature was gradually reduced to levels around 88 to 90 F, shivering reactions began at approximately 97 F and continued on until the rectal temperature had been reduced below 90 F. Following this, isolated muscle movements might occur, but the general reaction of shivering was not present. Evipal can be used as a

prompt means of inducing anesthesia. Rapid measures of reducing the patient's body temperature below 95 F is desirable to avoid the shivering reaction and can be accomplished by means of cracked ice, the use of a fan, and exposure to cold in a room especially designed for this purpose. Shivering increases the patient's body temperature and makes it more difficult to reduce body temperature, as might be expected. With more rapid methods of induction of refrigeration, it is possible to take the patient through the stage of shivering and to reach the level of 88 to 90 F (rectal) within a period of two or three hours. Paraldehyde (20 per cent solution in acacia) by nasal tube, following the avertin, seemed to give better results without symptoms of cerebral edema as noted in our early observations. With the advent of the use of paraldehyde, it was noted that blood pressure and pulse manifestations did not disappear during the refrigeration phase. Gradually the doses of sedatives (determined through the careful observations of Dr McCravey) were reduced so that the patients were permitted to gain consciousness a few hours after the refrigeration period had begun.

After quick induction by evipal and the establishment of a desired temperature level around 88 to 90 F (rectal), the patient was permitted to continue on little or no sedatives, and, although conversations could be carried on with the patient and slow but accurate responses obtained with the occasional complaint of feeling cold, the patients uniformly have not recalled their experiences while under refrigeration. At the present time we may say it has seemed best to have a room temperature of approximately 60 F. This is maintained by a special air-conditioning unit. The use of evipal as a rapid means of inducing anesthesia, followed by the application of ice until the patient's temperature is satisfactorily reduced below the 95 F level, has yielded very satisfactory results.

Paraldehyde administered by nasal tube is given as needed, depending upon the reaction of the patient. Restlessness

REFRIGERATION IN CANCER

Pathologic Observations in 100 Advanced Cases

LAWRENCE W. SMITH, M D, Philadelphia

(From the Department of Pathology, Temple University School of Medicine and the Temple University Hospital Tumor Clinic)

WITH the completion of the observations upon the first 100 cases of hopeless, terminal cancer which we have subjected to reduced temperatures either locally or generally, it has seemed worth while to attempt, dispassionately and critically, an analysis of the data that have accumulated. The reader will perhaps recall that these studies began a little more than three years ago with certain preliminary observations on the effect of local cooling of tumor tissue¹. These initial studies were followed by an investigation of the broader biologic aspects of the problem through laboratory experiments on various embryonal cells, particularly in respect to the effect of lowered temperatures upon the growth and development of chick embryos². On the basis of the regressive effects observed in such embryonal cells and of the establishment of apparent "critical" levels of temperature at which these changes occurred, the possibility of the application of such "critical" temperatures to metastatic tumors through the reduction of general body temperatures was only a logical step. The preliminary studies in this second group of cases was reported just a year ago³.

Since that time the work has been continued, every effort being made to study the effect of reduced temperatures upon as wide a variety of tumors as possible. In view of the wholly experimental nature of these studies, it has remained our policy to accept only hopeless cases who have had all the more usual orthodox surgical or irradiation therapy possible. However, only such cases as had been given a prognosis of at least two or three months have been admitted, as we have wished to have

sufficient time elapse for the full development of any cell changes. Finally, the cases have been chosen as pain problems, as the relief of pain has been such an outstanding feature in all instances. The experimental nature of these studies has been thoroughly understood by the patients, and their agreement to serial biopsy and autopsy examination has been obtained regularly.

We wish to emphasize the experimental nature of these studies and to reiterate the fact that up to the present time no cases have been accepted on the basis of treatment in the sense of expecting a favorable outcome, but only from the standpoint of relief of pain and for the purpose of studying the effect of variation of temperature upon cancer cell activity. It has been our hope that such changes might prove sufficiently significant to warrant recommending the use of such reduced temperatures as an adjunct to present methods of treatment. This, we believe, has been fully established by these studies.

In the time allotted to this discussion it is obviously impossible to more than generalize regarding the character of the changes which have been observed. For convenience in carrying out this discussion the problem resolves itself into three major parts. In the first place there are those changes observed as the result of local refrigeration of tumor tissue at approximately 40 to 50 F. In the second place, there are the changes observed in metastatic tumor in patients who have been subjected to generalized reduced body temperatures ranging from 75 to 90 F, and finally there are those occasional changes that have been observed in the

*Read by invitation at the Annual Meeting of the Medical Society of the State of New York
New York City, May 7, 1940*

cases of carcinoma have been permitted to be observed under these conditions, but what individuals in a fair degree of health might adjust themselves to is still unknown. We have observed death following the return to normal temperature levels after refrigeration and within a period of twenty-four hours of the refrigeration. In 3 instances cerebral edema was considered the cause of death, as the patients did not return to conscious levels, as is usually the case, within a period of four to six hours. In other instances an immediate cardiac failure ensued eight to twenty-four hours after the return to normal body temperature, and autopsy revealed marked myocardial degeneration as the cause of death. It has been suggested by my associate, Dr McCravey, and it is a reasonable supposition, that in patients where myocardial damage has already occurred, the load of returning circulation to the periphery, following recovery from refrigeration, is probably beyond the capacity of the heart to adjust itself to and may account for these sudden cardiac failures.

The biopsy and autopsy studies made from patients subjected to general refrigeration at 88 to 90 F (rectal) have shown some degenerative changes according to Dr L W Smith, although at this borderline subcritical zone of temperature, the manifestations are not so striking or so rapid as those in tissues sub-

jected to the level of 40 to 50 F. Local tissue refrigeration (40 to 50 F) produces remarkable biologic changes in undifferentiated cell growth as noted under the microscope.

Summary

The first observations in general refrigeration in the human being (as far as is known) are presented.

Human body temperature can be repeatedly and successfully reduced to around 80 F (rectal), and the patient observed for many hours (up to eight days) without subsequent abnormal effects.

In terminal cases of generalized carcinomatosis, death from cerebral edema and cardiac failure was noted in approximately 15 per cent during or following generalized refrigeration.

Temporary and prolonged periods of relief of pain were noted in almost every instance. Withdrawal of narcotics was therefore possible.

No definite regressive changes in undifferentiated cell growth were noted in deep metastatic lesions following generalized refrigeration. Temporary improvement frequently occurred.

References

- 1 Smith L W, and Fay, Temple J.A.M.A. 113 653 (Aug 19) 1939
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NEW YORK CITY DEATH RATE RISE LAID TO WEATHER

The general death rate for New York City in the week ending Saturday, August 31, was 8.6 per thousand of population, a jump of one-half point from the rate of the preceding week, according to Registrar of Records Thomas J Duffield in his weekly report handed September 4 to Health Commissioner John L Rice. "The fact that this rate was in excess of the expected value for the week by an amount beyond the limits of chance variation," says the report, "suggests that the stormy weather may have been a factor in this increased mortality. This suggestion is further supported by increases in pneumonia prevalence and in mortality charged to this disease."

"Despite the increase in the general death rate, the infant mortality remained at a low level

Only 54 infant deaths were reported during the week—an increase of 1 over the number of such deaths in the preceding week—and the infant mortality rate was 26.8 per thousand live births.

"One death from whooping cough was reported. With the exception of this disease, which showed an increase of 1 case, the principal diseases of childhood were less prevalent than during the preceding week. Eleven new cases of typhoid fever were reported, showing no change from the previous week."

"New cases of pneumonia numbered 137—an increase of 47 over the number reported in the previous week—and deaths ascribed to this disease showed an increase of 12, totaling 34."

No examination of the lungs for disease can be considered complete unless it includes fluoroscopic or x-ray examinations to reveal conditions

which may remain undetected by the usual methods, the J.A.M.A. for July 13 states in an editorial on tuberculosis.

will show the more rapid and striking regression. As examples in this group might be cited particularly 5 cases of bladder cancer which are being reported separately by our associate, Dr Augustus McCravery in the Genitourinary section of this meeting.* By marsupializing and exteriorizing the bladder cavity, local metal applicators can readily be designed that will fit the lesion and bladder cavity. In every case thus far in which this procedure has been carried out, the local bladder tumor has been reduced in size and almost completely destroyed within a period of six to twelve weeks. The deeper extension of such tumors where it has not been possible to maintain accurately the desired temperature has shown regressive changes, but some tumor tissue has been found to persist. In such cases it may be advisable to prepare the patient for treatment by preliminary nephrostomy or transplantation of one or both ureters, depending upon the location of the neoplastic process in respect to the ureteral orifices, to avoid the major complication of such bladder tumors, namely, renal infection. In all of these cases the patient's life has been prolonged far beyond the expectancy. Three of them are still living and recent biopsies from 2 of these patients show no viable tumor cells in tissue which appears to be representative of the lesion at this time.

In summary, it may be said that we feel that the local refrigeration of tumor tissue is an extremely valuable adjunct to the present methods of treatment, particularly in those cases where the tumor is inoperable. One may regularly expect regression in the size of the tumor mass accompanied by degeneration of the tumor cells to the point of actual necrosis and even disappearance of the tumor on occasion. If such treatment could be combined with irradiation, it is perhaps not too much to hope that our five-year figures in such cases will show an improvement. It must also be taken into consideration that wholly aside from the actual tissue changes which have been de-

scribed the procedure has earned a position in our therapeutic armamentarium for its relief of pain if for no other reason, as Arnott,⁴ Cooke,⁵ and others reported nearly one hundred years ago.

The Effect of Generalized Refrigeration on Metastatic Tumor Tissues

The interest that has been aroused in the medical profession in the generalized refrigeration of patients at temperatures ranging from 75 to 90 F hinges very largely upon the possible effects of such reduced temperatures upon distant metastatic tumor tissue. It was our thought originally, based upon the experimental laboratory evidence of Huggins and Noonan⁶ as well as our own studies on chick embryos, that if generalized body temperatures could be maintained below the levels which had been found critical for such embryonic cell growth, regressive cell changes in metastatic tumor tissue might occur. Like many theories that appear logical on abstract consideration but when put into actual practice prove somewhat disappointing, so it is in this case, insofar as the effect of such temperature levels are concerned in the *complete* destruction of metastatic cancer foci. However, the method has proved of such extraordinary importance as it relates to previously unconquerable pain problems and to a host of other pathologic conditions that its limitations as a possible therapeutic agent curatively in advanced cancer are only relatively disappointing.

In reviewing the histopathologic changes which are observed in the metastatic tumor tissues in those patients who have been subjected to generalized reduction of their body temperature, we should perhaps divide them into two major groups. First, the earlier cases in the series in which the temperature was usually maintained somewhere between 87 and 90 F, and the second group consisting of the more recent cases in which the temperature levels have averaged from 78 to 82 F. Likewise, to get an adequate picture of these various pathologic features the material should be

* Dr McCravery's paper will appear in the October 1 issue.—Editor

various non-neoplastic tissues and organs

Local Refrigeration Effects on Cancerous Tissues

It is in that group of cases where the primary tumor is relatively readily accessible and where local refrigeration can be carried out at temperatures of 40 to 50 F that the most striking regressive changes occur. Our observations have now been extended to include a wide variety of such tumors. Among these may be cited cancer of the breast, uterus, vulva, rectum, prostate, bladder, oral cavity, various peripheral lymph node lesions, thyroid, tumors of the brain, and even instances of bone tumor. It seems fair to state that in every instance in which it has been possible to mechanically apply apparatus to such lesions so that the delivered temperature would fall in the desired range of 40 to 50 F no case has been observed in which striking regression of the tumor mass has not occurred. This is accompanied by typical regressive cell changes going on to complete necrosis and in several instances to actual disappearance of the tumor cells as observed histologically in serial biopsies. Further confirmation of this is found in certain such cases dying subsequently of metastatic involvement but in whom no tumor tissue is found locally at autopsy. The effectiveness of the method seems to us unquestionable. Its limitations are largely those relating to technical difficulties in satisfactorily maintaining the optimal temperature level in the entire area desired. The penetration depth of such temperatures is relatively slight, and our more recent studies in this respect have led to a continuous modification of the procedures in an effort to secure the desired temperature level in the deeper parts of the tumor. In general, we have attempted to avoid confusing the issue by supplementing such cold applications by the use of x-ray or other methods of treatment. In the majority of cases such supplementary irradiation therapy has been impossible because the patients already had received the maximum amount

which they could tolerate. In the few nonirradiated cases the disease has been so widespread with the existence of distant metastases that it was felt the outcome would not be materially affected by such supplementary irradiation or surgery. We are inclined to feel, as a result of these experimental observations, that a combination of such local refrigeration with x-ray might well prove to be a theoretically more effective attack and hope to be able to present observations in such a group at a subsequent date.

The limitations of any physical procedure are so apparent that they require no elaboration. That localized refrigeration is an effective weapon in causing degeneration and necrosis of embryonal cells we believe must be recognized as an established fact as it is seen so regularly. The interpretation of the mechanism involved in the production of such regressive phenomena is something, however, which will require a very considerable amount of experimental investigation to establish by firm biophysical laws. It is our impression that embryonal cells which are maintained at these low temperatures are affected through interference with their normal metabolism. Whether this is purely a question of cellular anoxia may be debatable. In the last analysis, however, it would seem that such anoxia must exist. It does not seem unreasonable to suppose that this anoxia may be the result of a number of factors among which a reduction of the blood supply and very probably actual congelation of the cytoplasmic lipoproteins should be considered. This is a quite different situation than the actual preservation of cells through freezing. Tissue culture experiments continue to bear out the truth of this theoretical consideration. Such tumor cell cultures can be maintained for long periods of time when actually frozen, whereas they are apt to lose their viability within a few days when subjected to these critical temperature levels.

On the basis of these explanatory comments it becomes apparent that those tumors to which accurate application of 40 to 50 F temperatures can be obtained

will show the more rapid and striking regression. As examples in this group might be cited particularly 5 cases of bladder cancer which are being reported separately by our associate, Dr Augustus McCravey in the Genuitourinary section of this meeting.* By marsupializing and exteriorizing the bladder cavity, local metal applicators can readily be designed that will fit the lesion and bladder cavity. In every case thus far in which this procedure has been carried out, the local bladder tumor has been reduced in size and almost completely destroyed within a period of six to twelve weeks. The deeper extension of such tumors where it has not been possible to maintain accurately the desired temperature has shown regressive changes, but some tumor tissue has been found to persist. In such cases it may be advisable to prepare the patient for treatment by preliminary nephrostomy or transplantation of one or both ureters, depending upon the location of the neoplastic process in respect to the ureteral orifices, to avoid the major complication of such bladder tumors, namely, renal infection. In all of these cases the patient's life has been prolonged far beyond the expectancy. Three of them are still living and recent biopsies from 2 of these patients show no viable tumor cells in tissue which appears to be representative of the lesion at this time.

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scribed the procedure has earned a position in our therapeutic armamentarium for its relief of pain if for no other reason, as Arnott,⁴ Cooke,⁵ and others reported nearly one hundred years ago.

The Effect of Generalized Refrigeration on Metastatic Tumor Tissues

The interest that has been aroused in the medical profession in the generalized refrigeration of patients at temperatures ranging from 75 to 90 F hinges very largely upon the possible effects of such reduced temperatures upon distant metastatic tumor tissue. It was our thought originally, based upon the experimental laboratory evidence of Huggins and Noonan⁶ as well as our own studies on chick embryos, that if generalized body temperatures could be maintained below the levels which had been found critical for such embryonic cell growth, regressive cell changes in metastatic tumor tissue might occur. Like many theories that appear logical on abstract consideration but when put into actual practice prove somewhat disappointing, so it is in this case, insofar as the effect of such temperature levels are concerned in the *complete* destruction of metastatic cancer foci. However, the method has proved of such extraordinary importance as it relates to previously unconquerable pain problems and to a host of other pathologic conditions that its limitations as a possible therapeutic agent curatively in advanced cancer are only relatively disappointing.

In reviewing the histopathologic changes which are observed in the metastatic tumor tissues in those patients who have been subjected to generalized reduction of their body temperature, we should perhaps divide them into two major groups: first, the earlier cases in the series in which the temperature was usually maintained somewhere between 87 and 90 F, and the second group consisting of the more recent cases in which the temperature levels have averaged from 78 to 82 F. Likewise, to get an adequate picture of these various pathologic features the material should be

* Dr McCravey's paper will appear in the October 1 issue.—Editor

further divided on the basis of the amount of time during which these temperatures were maintained. They further should be considered on the basis of the type of tumor involved in each instance. To obtain an adequate volume of material on which to base such a statistical study is obviously going to be a matter of time and, therefore, we are only able to generalize broadly and give our impressions rather than formulate any final opinion.

The obviously outstanding defect in the analysis of such material lies in the relative lack of control biopsy tissue. Only in such cases where peripheral lymph node involvement was present or in rare instances where biopsy of deep metastasis was more or less accidentally and incidentally obtained do we have any base line for the individual cases. In some few instances we do have serial x-ray studies of skeletal lesions, and in some of these we have noted healing with bone replacement. In others there has been apparently no progression of the metastatic process while in a few there has been no apparent interruption in the rate of growth of the skeletal metastases. Arguing by analogy, this probably holds true in the soft tissue and visceral metastases. It is our hope, in course of time, to be able to establish individual critical temperature levels for the many cell types of tumor so that when possible we may the more intelligently apply such temperature levels to specific cases.

In general, it may be said that only rarely are changes found in metastatic tumor cells subjected to temperatures ranging from 75 to 90 F until a period of at least ninety-six to one hundred and twenty hours has been utilized. Not infrequently a period of at least three hundred hours is necessary, and in some cases, particularly where a good deal of differentiation of the tumor cells exists, no appreciable alteration in the appearance of the tumor cells can be demonstrated, even after such an interval. However, it is our impression that the regressive phenomena that are demonstrable in most of the cases are similar

in character to those observed in the tumors subjected to local refrigeration in the lower temperature range of 40 to 50 F. They vary only in degree. These changes may be described as of the usual regressive type. The first thing which can be noted is a marked variation in staining qualities of the tumor cells as compared with the normal tissues. At first we were of the opinion that this was a technical artefact, but long experience has established, to our own satisfaction at least, that this represents an actual change in the physical properties of the cells. Following these minor changes, which undoubtedly can be overlooked as being of any significance so far as the viability of the tumor cells is concerned, further hydropic and granular changes of the cytoplasm of the cells take place. Later karyorrhectic or karyolytic nuclear changes comparable to those noted with x-ray therapy occur. These regressive changes may go on to complete breakdown of the tumor tissue. Indeed, in certain instances of tumors of the gastrointestinal tract the regressive changes have been so extensive that the tumor has sloughed out of the wall of the involved area and leads to a secondary peritonitis. Lymph nodes have been observed to undergo marked diminution in size with what appeared to be almost liquefaction necrosis. This has been particularly observed both in acute leukemia and in lymphosarcoma. It is our impression that these regressive phenomena are much more extensive and regularly encountered than those found in comparable metastatic tumors which have not been observed under generalized refrigeration. This is an extremely difficult point to decide and its further study and evaluation are most important.

Unlike these morphologic cell changes, which may be open to the criticism of individual and prejudicial interpretation, no such controversy can exist regarding the gross regression observed in many cases. What causes such reduction in size of the metastatic tumor masses is extremely difficult to understand or explain. We can perhaps assume that

there is a diminished blood supply to the lesion and that a certain amount of the regression in size is the result of relative avascularization. However, this certainly does not account for the entire diminution in size which we have seen in many cases. Nor does it explain the striking clinical improvement which commonly accompanies such a picture. For example, a case of carcinoma of the breast, admitted with widespread skeletal involvement and with intracerebral metastasis showing choked disks and left facial paralysis is entirely free of pain, shows only a slight residual weakness of the facial muscles, and the eyesight is normal, or another instance of a physician with a huge, fixed, colloid carcinoma of the colon that became reduced in size by nearly 50 per cent and became freely movable. Similar instances could be repeated almost monotonously.

Thus, summing up the effects of the reduction of body temperature generally insofar as metastatic tumor tissue is affected, we can say that in the majority of cases not only is there relief of pain but there is reduction in the size of the tumor metastases, which is accompanied by clinical improvement of at least a temporary nature. Microscopically, regressive cell changes are observed in most of the lesions. In no case have we evidence that the metastatic tumor tissue is completely destroyed, but the amount of necrosis and degeneration is distinctly more than in comparable cases not subjected to refrigeration. It is our firm conviction that the lives of the majority of our cases have been prolonged by this procedure. We have no evidence either from the laboratory, or clinically, to suggest that the rate of growth of such metastatic tumor tissue is ever accelerated. So long as the temperature is reduced there is unquestionable retardation of growth, the effect of which often persists for many weeks or months. It is our present impression that the sharp reduction of body temperature to around 80 F for a period of forty-eight to ninety-six hours, such periods being repeated at intervals of about a week to ten days, is

more effective clinically in the relief of pain and the persistence of such relief and in the general well-being of the patient than for longer periods of time with the temperature maintained around 89 to 90 F. Thus far, however, the pathologic material that we have studied from the two groups apparently does not show any appreciable difference, the regressive phenomena depending more upon the total actual temperature reduction attained. However, not enough material is available as yet to determine this particular point.

Effects of General Refrigeration upon Nonneoplastic Tissues

A complete discussion of the various pathologic lesions that have been found at autopsy in this series of 100 cases of cancer observed under either local or general reduced temperatures, or a combination of the two, cannot adequately be presented in a brief paper of this character. Accordingly, only a few very broad generalities can be made and the further discussion left for a subsequent time. By and large, it may be said that only rarely are significant morphologic cell changes observed in normal tissues even when subjected to prolonged local refrigeration for as much as five and one-half months. Under general refrigeration such changes as do occur might better be interpreted as being of a pathologic-physiologic nature rather than primarily the result of anatomic cell alteration. A preliminary report of the clinicopathologic data already has been presented,⁷ which emphasizes the functional changes observed in patients undergoing generalized refrigeration. These might more properly be considered as potential clinical complications rather than as strict histologic lesions and relate more to organs and organ systems than to the component cell structure.

Among such complications there have occurred 5 instances in which rather severe myocardial degeneration has been found at autopsy which has seemed to be of a sufficient degree to be a probable factor in the patient's death. Three of

these were associated with rather extensive coronary disease as well, but in the other 2 cases no such vascular complications were observed

In 3 cases the existence of a pancreatitis has been noted. In 1 of these it seems to be possibly of some clinical importance. All 3 of these cases happened to occur in patients who might almost be termed narcotic addicts. In view of the recognized incidence of such pancreatic pathology as a complication of narcotism occasionally, the relationship of refrigeration does not seem to assume any major significance.

In 4 cases a rather sudden and persistent fall in blood pressure which continued up to the death of the patients some twenty-four to forty-eight hours later was explained in 3 instances by extensive bilateral adrenal metastatic involvement. In the fourth case no adequate explanation was found either in the adrenals, or in the heart, or in the central nervous system.

So far as lung pathology is concerned the question which is most often raised is in respect to the occurrence of pneumonia in these patients subjected to such reduced body temperatures. Any answer to this problem must be qualified. It is our impression that during generalized refrigeration there is very little likelihood of pneumonia developing except in such cases as already have pulmonary pathology either as metastatic lesions or some associated chronic infectious process. As a terminal event which bears little or no relationship to refrigeration the incidence of such infection seems to be about comparable to that observed in a similar group of cases who have been treated by other measures. There is a small group of cases in which bronchopneumonia of varying intensity has been observed to develop sometime during the forty-eight-hour post refrigeration period. These have been chiefly in cases associated with metastatic lung lesions or with the development of an aspiration pneumonia from some lesion of the nasopharynx or upper respiratory tract. It is our feeling at the present time that

such postrefrigeration pneumonias must be considered as adding slightly to the risk, but in view of the serious nature of the disease and the amazing clinical improvement associated usually with almost complete relief of pain, such a slight risk is fully justified. The routine prophylactic use of sulfanilamide or one of its derivatives preceding induction of these low temperatures and administered during the period of the return of temperature to normal would seem to be a measure that should reduce this possible risk to an almost negligible figure.

Summary

A review of the pathologic findings observed in a series of 100 cases of human cancer subjected to reduced temperatures either locally, generally, or in combination, is presented. In accessible tumors where local temperatures of 40 to 50 F can be maintained, there is observed a regular regression in the size of the tumor mass. Histologically such tumor tissue shows degenerative changes going on to complete necrosis and the local disappearance of the tumor on occasion.

The effect of generalized reduction of body temperature upon distant tumor metastasis is variable. In the majority of cases regression in size of such tumor masses is observed grossly. Microscopically, changes similar to those observed in the local refrigeration are frequently found but vary greatly in extent and rarely show extensive necrotic changes. Such changes are rarely observed until after one hundred and twenty or more hours of generalized refrigeration have been given.

In general, no significant cell changes are observed in the nonneoplastic tissues of individuals subjected to generalized reduced body temperatures. However, certain physiologic functional disturbances of a systemic character have been observed. Their possible relationship to generalized refrigeration can be discussed, but no definite conclusions can be drawn.

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SENATOR TAFT ON THE PERILS OF MEDICAL MEDDLING

Senator Robert A. Taft, of Ohio gave some home thrusts at governmental meddling in medical matters in an address before the Ohio State Medical Association at Cincinnati on May 16, on "Medical Aid for the Needy," among other things he said

"The medical profession in the last hundred years, increasingly in the last generation, has worked miracles. Preventive medicine has checked and destroyed epidemics, and lengthened the span of years. Surgery saves thousands of lives annually. The lives of mothers and infants are more secure. Now we are concerned that society shall be able to share these boons with

"But let's do it in the right way. Let's not do it at the cost of the independence of the medical profession, which has given so unselfishly of its time and talents. Let's not do it in a way which will only give the needy the kind of treatment a poor citizen gets from a government bureaucrat in Washington. No human suffering should go unheeded. But let us see to it that self-reliant Americans retain their freedom to cooperate voluntarily in health insurance plans if they want to, and their liberty of choice in the matter of the family doctor. We want an America free as well as healthy. There is no necessary contradiction.

"But the dangers of extending free medical aid in the wrong way are intensified when the federal government enters the field. At least under the present administration, there is not the slightest conception of the necessity for economy. They don't seem to realize that sooner or later the whole people, rich and poor alike, have to pay for what they spend. What is the validity of the argument that the federal government can afford to pay when the states cannot, so long as the federal government is four billion dollars a year in the red? Why complain of the inadequacy of state tax systems when no one has the nerve to devise a federal tax system to pay the federal bill? Furthermore, if all health control is centered in Washington, the whole nation may be suddenly

subjected to experiments proposed by any group of cranks who may obtain the ear of the executive or Congress. Socialized medicine is only one of the changes which might be effected over- pressure at the right spot. Even greater care is necessary in extending federal aid to health than in the case of local and state government.

"The Wagner Bill, in particular, seems to me an extraordinarily dangerous way of dealing with the whole subject.

"The bill is typical of New Deal technique. Whenever an abuse occurs or a need arises in any field, the only solution which the New Dealer offers is a complete regulation and supervision of every detail of that field by the federal government. Bureaus are created and given power to issue regulations increasing their own power. Instead of the law prohibiting certain definite actions which have produced bad results and giving the federal bureau power to enforce, the law gives the bureau arbitrary and discretionary power to tell the industry concerned just how it must run every detail of its business.

"So also in this health field. Instead of picking out a particular problem and attempting to relieve that problem with some federal financial assistance and a suggestion to the states as to how with that assistance they can eliminate a serious evil, the Wagner Health Bill proposes to blanket the whole field with an expenditure of 275 million dollars a year, increasing gradually to 800 million dollars a year. It encourages compulsory health insurance. It provides the funds with which the state otherwise unable to do so, may socialize the entire medical profession.

"In my opinion, each step taken by the federal government should be taken with care and to meet a demonstrated need. There should be an effort first to encourage the states to develop sound methods of medical aid to the needy, and the demand for federal assistance should come from the states instead of that assistance being forced upon them."

UNVARNISHED ADVICE TO THE MEDICAL GRADUATE

A touch of sardonic humor marks the "Advice to Graduates—Rather Unvarnished," given by the *Hahnemannian Monthly*. Here are some of precepts proffered

Do not tell a professional mistake on yourself—someone else will be glad to do this for you.

Do not select a specialty because you admire some one of your professors who is particularly good at it—you may not be so good yourself.

Pick your specialty according to your own talents.

Steer clear of a doctor who glorifies some professional colleague's mistake—he will be glad to do the same thing for you at any time.

Select a nurse with a strong back rather than a strong mind—you are supposed to do the thinking. Quickness, gentleness, and silence are indeed golden here.

If you pass through medical school unscathed by cupid's dart and are still single marry the local banker's daughter in the town you practice.

If you feel the urge to celebrate, do it out of town and *take a train*. Lastly remember—after all, the respect of your colleagues is your greatest satisfaction—any doctor can be thought a tin god by his patients but you must have the goods to get by with the profession.

SYPHILIS IN INDUSTRY

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THE importance of syphilis in industry was recognized long before there was any thought of the present campaign against syphilis. Isolated industries were studied, such as that reported by Stokes and Brehmer¹ on railroad workers in 1920. Recently, Stokes, Beerman, and Ingraham² have summarized the various studies on the incidence of syphilis in industry from 1920 to date. With one exception, all of the reports on the incidence of the disease in industry dealt with *single* industrial groups or separate, isolated industrial companies.³⁻⁵ There was wide variation in the incidence of syphilis depending upon the geographic location, nearness of the industry to a large city, the type of occupation, and the particular population group involved. Parran¹⁶ reported a routine blood test from fifteen separate companies, which showed 4.8 per cent to be positive among 110,675 employees of these industrial companies. When the campaign against syphilis was instituted in Buffalo in August, 1935, it was at once apparent that in any approach to the problem of syphilis in industry in a large industrial city the determination of the incidence of the disease in industry *generally* was absolutely essential. With this in mind, the director of syphilis control of Buffalo began a survey of all blood serologic tests performed in the laboratory of the Department of Health of Buffalo from the various industrial concerns throughout the city.

Table 1 concerns the data obtained in this study. During the first two and one-half years of the survey, January 1, 1935, to July 1, 1937, men in general industry showed 6.7 per cent positive tests and women 5.9 per cent, or a combined percentage of 6.6. During this same period

there were 6.1 per cent positive tests in food handlers, both men and women, and 4.6 per cent positive tests among patients seen by private physicians. During the last six months of 1937 and the entire year of 1938, 2,500 additional routine serologic tests were performed on the bloods of industrial employees. Probably as a result of the intensive campaign against syphilis, the percentage of positive tests dropped to an even 5 per cent. If the tests performed on Negroes* are subtracted from these figures, the final result is approximately 5 per cent positive during the initial period of 1935, 1936, and the first half of 1937, and 4 per cent during the second period. In 1938 the number of early or new cases of syphilis in the entire city dropped to approximately one-third of the number reported in 1935.

From this city-wide survey it was apparent that in a large industrial city in the North the incidence of syphilis in industry is approximately 4 to 5 per cent, the variation depending to a large extent on the number of Negroes included in the tabulation.

The kind or type of syphilis to be expected in the various classifications of industry is a point of much practical importance. Generally speaking, an industry that employs a large percentage of individuals in the age group from 18 to 30 may expect a relatively high incidence of early syphilis. An organization that employs a large percentage of individuals in the age group from 30 to 40 may expect relatively few cases of early syphilis and a high preponderance of latent syphilis and early cardiovascular and neurosyph-

* Incidence of syphilis among the Negro population of Buffalo is 18 to 20 per cent.

TABLE 1—ROUTINE WASSERMANN EXAMINATIONS OF VARIOUS POPULATION GROUPS
1935-1936-1937 (Jan-June)

	Sex	Total	Positive	Per-centage Positive	Percentage Positive Combined	
General industry	Men	14 061	942	6.7	6.6	6.4% positive in entire group
	Women	965	57	5.9		
Food handlers	Men	5 958	371	6.2	6.1	
	Women	4 459	268	6.0		
Private patients	Men	1,647	94	5.7	4.6	
	Women	1,137	36	3.0		

During 1937 (July-December) and 1938 2 500 additional routine Wassermann tests in industry gave 5 per cent positive results.

Material presented in this chart was obtained through the cooperation of Dr. C. A. Sargeant and his successor Dr. Lopo DeMello who were respectively director of syphilis control of the city of Buffalo and clinical consultant in the Division of Syphilis Control of the New York State Board of Health.

TABLE 2—ANALYSIS OF 4 096 INDUSTRIAL WORKERS ADMITTED TO EDWARD J. MEYER MEMORIAL HOSPITAL (BUFFALO CITY HOSPITAL)

Group	Total Number	No with Syphilis	Percentage with Syphilis	No and Percentage with Early Syphilis	No and Percentage with Latent Syphilis	No and Percentage with Neurosyphilis	No and Percentage with Cardiovascular Syphilis
Laborers (men)	2,226	375	16.8	25 6.9%	129 37.1%	66 17.6%	47 12.5%
Clerks	397	38	9.5	7 1.8%	12 3.1%	12 3.1%	4 1.0%
Skilled workers	596	56	9.3	10 1.7%	25 4.4%	21 3.7%	4 .7%
Railroad workers	76	4	5.2	0	3 .75%	1 .25%	0
City employees	41	5	12.1	0	3 6.0%	2 4.0%	1 2.0%
Domestics	278	60	20.1	10 17%	41 68.6%	2 4%	8 6.5%
Shop workers (women)	31	3	9.6	1 3.3%	2 6.6%	0	0
Barbers	38	9	23.6	2 2.2%	4 4.4%	3 3.3%	2 2.2%
Food handlers	323	57	17.6	6 10%	28 48.5%	28 48.5%	5 8.4%
Total for light workers	1 780	232	13	36 15.5%	118 50%	69 29.7%	22 9.4%

his. An industry with many employees of long duration in the age group over 40 may expect a high incidence of late cardiovascular and neurosyphilis. Expressed in a different way, it is important for industrial physicians to know and appreciate which type of late syphilis may be expected to affect operating efficiency and to present the greatest hazard from the standpoint of injury to the employee and the public.

With these points in mind, it was felt advantageous to conduct a survey of a large group of industrial workers examined at the Edward J. Meyer Memorial Hospital (Buffalo City Hospital). Four thousand and six individuals were seen, all were given a complete physical examination, including a spinal fluid test and a special study of the cardiovascular system when indicated. Table 2 shows the results of this study. Inasmuch as the patients of this hospital are mostly un-

employed or in the lowest income group, it was felt desirable at the same time to make a survey of a similar group of industrial workers seen in private practice who also had syphilis and had received a thorough physical and serologic study. The results of this study are shown in Table 3. A combination of the figures in the various groups presented in both tables indicates the type or kind of syphilis present in 1,037 patients with syphilis in all age groups of the industrial population. We would like to emphasize the following points:

1. Out of 399 workers in the "heavy" industries, with syphilis, less than 7 per cent presented early syphilis. Among the workers in the "light" industry group, the percentage of early syphilis was 23.8. Undoubtedly, the average age of the workers in the heavy industries was considerably greater than that of workers in the light industries. However, the

TABLE 3—ANALYSIS OF 480 CASES OF SYPHILIS IN WORKERS EXAMINED IN PRIVATE PRACTICE

	No of Cases	No and Percentage with Early Syphilis	No and Percentage with Latent Syphilis	No and Percentage with Cardiovascular Syphilis	No and Percentage with Neurosyphilis
Heavy laborers	24	2 8 3%	7 29 1%	8 33 3%	8 33 3%
Light laborers	50	17 34%	12 24%	8 6%	15 30%
Clerks	109	31 28 4%	33 30 2%	8 2 7%	33 30 2%
Salesmen	72	20 27 7%	39 58%	2 2 7%	9 12 5%
Skilled crafts	185	38 28 1%	28 20 7%	1 0 7%	49 36 2%
Railroad operators	15	1 6 6%	7 46 6%	0 0	5 33 3%
Food handlers	20	7 35%	0 0	3 15%	10 50%
Barbers	5	2 40%	1 20%	0 0	1 20%
Total for light workers	406	116 28 7%	121 29 8%	10 2 9%	123 30%

TABLE 4—COMBINED STATISTICS ON CARDIOVASCULAR AND NEUROSYPHILIS IN "LIGHT" AND "HEAVY" WORKERS

	No with Syphilis	Percentage with Cardio- vascular Syphilis	Percentage with Neuro- syphilis
'Light' workers	638	5	29 9
'Heavy' laborers	399	13 5	18 5

discrepancy emphasizes the necessity for periodic examinations and serologic tests on the workers in the so-called light industries

2 In the heavy industry group (Table 4), 18 5 per cent showed evidences of neurosyphilis, and 29 9 per cent of the workers in the light industry group were found to have neurosyphilis. Clerks, skilled workers, and railroad employees with asymptomatic and late neurosyphilis can account for a large amount of lowered operating efficiency, direct monetary losses, and accidents involving the public, fellow workers, and themselves

3 In the heavy industry group (Table 4), 13 5 per cent showed evidences of cardiovascular syphilis, whereas in the light industry group, where physical stress is reduced to a minimum, only 5 per cent showed evidences of cardiovascular syphilis. This observation is in line with those of Cochems and Kemp⁶ in 1937 from an analysis of 749 employed persons with syphilis. Our observations on patients developing aneurysms and aortic regurgitation as a result of trauma or severe exertion while employed in heavy industries indicate that each such case costs the industry some \$5,000 to \$10,000. The detection of syphilis in heavy industries

where it is largely neglected, is, therefore, of definite practical economic value to the industry itself as well as to the employee

4 One group requires special consideration—namely, the food handlers. In the combined groups, 77 food handlers had syphilis and 13, or 16 8 per cent of these (1 out of 6), had manifestations of early or infectious syphilis. In New York State we have had, until recently, a special food handlers' law requiring periodic Wassermann tests at three-month intervals. None of the 13 food handlers with infectious lesions of syphilis was discovered because of the necessity for such a test. It is possible that some of these individuals may have evaded the law. If it is desirable to detect early infectious cases of syphilis among food handlers more than it is among other groups (and we seriously doubt that it is), a routine serologic test performed every three to six months cannot be expected to pick up more than 25 to 50 per cent of the infectious cases during the first week of their existence. If compulsory serologic tests are performed on food handlers with the idea of protecting the public from infection through intermediate contact, we believe the entire plan is wasted effort. We have never seen a case of syphilis transmitted by food handlers, or for that matter by clerks or barbers meeting the public, through intermediate contact with plates, glasses, cups, vegetables, fruits, etc. The greatest danger from these individuals, as Stokes, *et al*, emphasize, is

the transference of the disease to other employees and to patrons of the establishment through the usual method of sexual intercourse. In our opinion, it would be much more to the public's benefit to require periodic physical and serologic examinations of employees of all public transportation companies who are daily responsible for the lives of millions of our citizens which in turn depend upon the proper functioning of the cardiovascular and central nervous systems of those employees

Syphilis and Trauma

Time and space do not permit us to enter into a full and complete discussion of the relationship between syphilis and trauma. Every industrial physician and surgeon should read and reread the various splendid contributions on this subject by Klauder^{7,9,10} and Klauder and Solomon.⁸ Practically every important scientific consideration dealing with the relationship between syphilis and trauma has been covered in this series of articles. Because of these articles and the rapidly expanding knowledge regarding syphilis not only among physicians but the public, there is a constantly decreasing number of patients in whom the influence of syphilis on trauma is of importance. Nevertheless, it would seem well at this point to summarize some of the main facts

1. In early syphilis, with spirochetes in the blood stream, spirochetes tend to localize in inflamed and recently scarred areas. For instance, a patient who has a burn and contracts syphilis a few months after healing has taken place is apt to develop lesions of early syphilis in and around the area of scar tissue and later to develop tertiary lesions in the same area. Obviously, this is not a common occurrence in industry.

2. After the early stage of dissemination of the spirochetes, the organisms remain quiescent in most of our organs and tissues until such time as the normal evolutionary period brings about clinical symptoms or some occurrence such as localized trauma disturbs the evolution-

ary process and brings about an immediate appearance of tertiary, gummatous lesions. There is no scientific evidence to prove that, in an individual past the early stage of syphilis, periodic showers of spirochetes occur in the blood stream. The only possible exception is during pregnancy. When an individual suffers a fractured femur and x-ray examination shows an uncomplicated fracture and then subsequently this fracture fails to heal and further x-ray examination reveals the presence of an osseous syphilis at the point of fracture, a quiescent focus of spirochetes has been lighted up by an injury at that point. There are hundreds of such examples in the literature,^{12,13,14} —the development of interstitial keratitis after injury to the cornea and the development of cutaneous and mucous membrane gummas at the site of previous injury or surgical manipulation.

3. There should be no confusion in the distinction between the slow healing of wounds due to cutting into a pre-existing gumma and the failure to heal because of the development of a new gumma at the site of injury. In the pre-Wassermann era, the former complication occurred with considerable frequency, but, with modern methods of examination and diagnosis there is no excuse for such a blunder.

4. When the central nervous system is considered, the same principles apply. A direct injury to the brain substance may induce the localization of spirochetes, provided the individual is in the early stage of syphilis or contracts the disease during the first year or two following the injury. However, in the case of an already existing neurosyphilis the same principles apply as in the case of direct injury or surgical intervention in an already existing gummatous process. The injury may consist of severe direct trauma to the head, toxic processes, infectious diseases, or general anesthesia. There is an aggravation of an already existing process, and, if the individual is far enough along in the evolution of his brain syphilis, frank paresis is apt to develop, whereas previous to the injury he may have had a simple,

asymptomatic neurosyphilis or a totally unrecognized neurosyphilis

For the purposes of this discussion we have recently reviewed our cases of syphilis complicating trauma. These cases are listed under the following diagnoses: (1) surgical incision in pre-existing periosteal gumma, (2) nodulo-ulcerative tertiary syphilis occurring at the site of recent injury, (3) fracture at the site of pre-existing osseous gummas, (4) periosteal gumma following a blow on the tibia, (5) osseous gummas of the skull following a blow on the top of the head from a timber, (6) interstitial keratitis following an injury to the cornea from a foreign body in congenital syphilis, (7) interstitial keratitis after a burn of the cornea from hot sodder in acquired syphilis, (8) paresis following a severe head injury, (9) paresis following prolonged surgical anesthesia, (10) paresis following high temperature from streptococcal infection, (11) aortic aneurysm following heavy physical exertion.

In analyzing these individual cases, the following conclusions were at once apparent:

1 The average cost of each case to the industry was exceedingly high.

2 The proper syphilis program in each industry involved would have prevented syphilis from being a factor in any case.

3 No cases of syphilis complicating trauma have been seen by us in plants having an adequate syphilis program.

Suggestions for Syphilis Program in Industry

We are in complete agreement with the general principles laid down by Parran¹⁵ and with the editorial comments by Moore^{16, 17} on syphilis and unemployment. We are, in general, in agreement with the suggestions of Sayres,¹⁸ except that we believe he places needless emphasis on the transmission of syphilis through personal contact with food handlers, hotel help, barbers, beauty parlor workers, pullman porters, matrons, nurses, school teachers, etc. With regard to Gehrman's findings⁵ in dealing with the treatment of syphilitic employees in the widespread du Pont in-

terests, we are inclined to agree with his conclusions made *at the time*. His conclusions are a severe indictment of the quality and cost of antisyphilitic treatment received at the hands of general practitioners. There is no excuse for such conditions existing today in the ranks of the general practitioners, nor is there any excuse for a lack of knowledge of syphilis on the part of industrial physicians and surgeons. Bearing these problems in mind and the data that we have presented, we submit the following suggestions regarding a syphilis program in industry.

For the executives

- 1 Establish routine pre-employment physical and serologic examinations and periodic re-examinations of all employees. This should include executives, clerks, and skilled workers, as well as the purely physical workers.
- 2 Sponsor refresher or postgraduate courses in syphilology for members of the medical staff and make adequate consultation and supervisory services available.
- 3 Become acquainted with the following scientific facts:
 - (a) The danger of transmission of syphilis in industry from direct or indirect contact (tools, drinking cups, door knobs, toilet seats, etc.) is absolutely minimal and the factor of least importance in the control of syphilis in industry.
 - (b) The positive serologic test is no criterion of infectiousness and should be interpreted only by a physician on the basis of a complete physical examination and determination of type or kind of syphilis present.
 - (c) The positive serologic test or its degree of positiveness as expressed in plusses (+++) is no measurement of the stage or seriousness of the disease or effectiveness of treatment.
 - (d) The negative serologic test without physical examination is open to the same criticism as is the positive test. The highly infec-

tious primary lesion (chancere) is not accompanied by a positive blood test during the first four to ten days of its existence, and an appreciable percentage of individuals (5 to 10 per cent depending on the laboratory technic) with late syphilis have negative blood tests. This fact, together with the necessity for discovering newly acquired infections among old employees, is the reason for periodic re-examinations.

4 Based on a knowledge of the foregoing facts, an enlightened policy toward prospective and old employees should include the following:

- (a) Rejection of only those patients with syphilis who show evidence of damaging late syphilis or early infectious syphilis.
- (b) Insistence on complete physical examination, including spinal fluid examination for all employees found to have syphilis.
- (c) Insistence on adequate modern treatment with supervision by syphilologist if indicated in special cases.
- (d) Transfer of employees with cardiovascular and neurosyphilis to positions entailing no hazards for themselves, their co-workers, or the public.
- (e) Dismissal of only those syphilitic employees refusing to cooperate. There is nothing more unjust than the blind dismissal of an employee because of a positive Wassermann. With cooperation and proper treatment, the industry will gain a loyal employee and take on no increased hazard.
- (f) Maintenance of strict confidential relationship between employee and company physician.
- (g) Cooperation with local health authorities in reporting and tracing the shifting or migrating worker with syphilis.

For industrial physicians and surgeons

- 1 Become conversant with published data regarding the direct and indirect

cost of syphilis to industry in general and your own plant in particular. Use this knowledge in "selling" your company executives on a proper and completely modern syphilis program.

- 2 Improve your own knowledge about syphilis with postgraduate courses and secure adequate expert advice and guidance from a qualified syphilologist.
- 3 Cooperate with the local public health authorities in tracing "contacts" and itinerant workers with syphilis and also in the elimination of houses of prostitution from the neighborhood of the plant.
- 4 Keep a complete record of the physical examination and treatment of every syphilitic patient. Check his treatment with the recognized published systems of treatment indicated in his case (early, latent, liver, cardiovascular, skin, bone, special sense organ, and neurosyphilis). Insist on consultation with a specialist where indicated so as to check up on the adequacy of treatment.
- 5 Do not be satisfied with a diagnosis of syphilis. Insist on knowing the kind or type of syphilis and the degree of damage, if possible, in the principal organs involved.
- 6 Remember that late cardiovascular syphilis is two to three times as common in workers doing heavy physical labor as in those performing jobs requiring little or no physical strain. Remember also that neurosyphilis is almost twice as common in executives, clerks, and skilled workers as in "heavy" laborers.
- 7 Remember that all persons with syphilis, unless it is contraindicated by old age or general debility, should have a spinal fluid examination. Approximately 15 per cent of the workers with "latent" syphilis will be found to have a positive spinal fluid.
- 8 Remember that persons with cardiovascular syphilis and neurosyphilis require specialized treatment from the beginning.

Conclusions

The incidence of syphilis among industrial employees in a large northern industrial city is not so large as some would have us believe nor so minor as indicated in certain limited surveys of a few companies. Prior to the campaign against syphilis the percentage was 6.6, and at the present time it is approximately 5. Excluding the Negro employees, the incidence of syphilis in industry is now approximately 4 per cent.

The kind or type of syphilis to be expected in different employee groups is of importance. Early syphilis is a minor hazard except among large groups of employees 30 years of age and younger. Periodic examination and serologic rechecking will pick up these cases. Late cardiovascular and neurosyphilis are the greatest hazards to industry, to the public, and to the employee. They should be recognized by periodic examination and serologic rechecking. Workers subjected to heavy physical strain are more than twice as liable to develop late cardiovascular syphilis as are those workers using mild physical effort. Late neurosyphilis is of greatest importance among clerks, skilled workers, and railroad employees.

The danger of infection from food handlers, clerks, barbers, etc., has been greatly overrated. More attention should be paid to infections transmitted in the usual way among mixed social groups from within and outside the plant.

The proper syphilis program in an industrial plant will prevent the frequently serious and expensive complication of syphilis and trauma.

Suggestions for improving the syphilis program in industry for the executives and for industrial physicians and surgeons can largely be expressed with the one word "education." With this in mind we have made definite concrete suggestions for executives and industrial physicians and surgeons which we think should be of distinct benefit in encouraging the adoption of a proper syphilis program in industry.

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Discussion

Dr Theodore Rosenthal, *New York City*—It has been a great pleasure to listen to such an unusually complete paper on a subject that has interested us in New York City for some time.

In discussing this presentation, I think it desirable, not only for academic but also for practical purposes, to draw a distinction between the terms prevalence and incidence. Accepted public health practice today regards prevalence as the number of cases of a disease existing in the population at any given time, while incidence relates to the number of new cases occurring in the population for a period of time, usually one year, in other words, incidence is the annual attack rate, while prevalence may be looked upon as being a discovery rate.

It is indeed interesting that figures for the prevalence of syphilis in industry, gathered as the result of a number of surveys in different industrial groups in New York City, resemble Dr Osborne's figures so closely. On the basis of serologic surveys made recently on over 8,000 individuals employed in fourteen industries, 6.1 per cent were found to be infected with syphilis.

The observation that heavy industries predispose to the development of cardiovascular syphilis while clerks, skilled workers, and railroad employees show a greater predisposition to neurosyphilis is of great importance and commands the serious consideration of industrial physicians.

The recommendations for syphilis control programs in industry are in line with recognized

opinion on the subject. In this connection attention is called to the efforts of the New York City Department of Health in securing a better understanding of this problem on the part of all of the various groups concerned. As a result of conferences with medical directors of large industrial organizations in this city several years ago, the following agreement was drawn up

As Medical Director of the (Company)
I agree to the following

- 1 All reports made by the Department of Health to me concerning employees or prospective employees will be kept absolutely confidential, as required by Section 88 of the Sanitary Code.
- 2 All cases of venereal disease discovered will be reported on the official forms supplied by the Health Department, as required by Section 88
- 3 All individuals found infected with syphilis or gonorrhea as a result of these tests will be treated by us or referred for appropriate treatment and will be followed up to ascertain whether they continue under treatment.
4. No discrimination will be practiced on employees or prospective employees because they show evidence of venereal disease on laboratory tests but are otherwise physically fit for the employment which they have or seek.

(Signed) _____ M D
Medical Director

This has been reproduced in leaflets for the information of the public at large, and thousands have been distributed to workers throughout the city

There can be no question that the fundamental factor of greatest importance in considering the problem of syphilis in industry is proper information on the subject to all concerned. This requires both intensive and widespread health educational activities directed alike at management, labor, the profession at large, and the plant physician. Many labor unions in this city have exhibited considerable interest in syphilis control and have already participated with the Health Department in both educational work and case-finding activities

More emphasis is needed in the medical schools, both undergraduate and postgraduate, on these important facts as part of any adequate medical education

Contrary to the experience in other communities, practicing physicians in New York City have cooperated very well, not only with industry in general but also with the local health authority, in rendering proper and efficient treatment to infected employees. Many of the large industrial organizations in the city have done splendid work assisting both the practicing

physician and the Health Department in initiating case-finding activities, referring employees to their own physicians for necessary treatment, and in rendering reports to the Health Department.

Permit me to again express my appreciation of this valuable contribution to a subject largely neglected until recent times

Dr George H. Gehrman, *Wilmington, Delaware*—In general, I agree with everything Dr Osborne brought out with a few exceptions. We have been conducting an antisyphilis program since 1934. The program was adopted with the idea of promoting better public health by protecting the interest of the employee, by protecting his health, and protecting the interest of the company. We had already experienced several cases where syphilis had cost the company considerable money. So we started our program with the idea of picking up as many syphilis cases as we could through serologic tests, physical examinations, etc. All employees have a serologic test before employment, and all plant employees have one once a year. Better than 95 per cent of our people want serologic tests once a year. As time progresses they ask for it. We have tried to maintain the policy that syphilis is not a company responsibility, and we refer all cases to family physicians or to a physician of the employee's choice for treatment. I agree with Dr Osborne that today we do not have the difficulties we had a few years ago. I would like to take this opportunity of saying that if we had the control that they have in Buffalo, our syphilis problem would be ideal. We reject as few as possible of our applicant syphilis cases. They are taken on with the understanding that they must take adequate treatment. We follow them up routinely twice a month to see that they are getting adequate treatment and are following their physician's orders.

There are certain occupations from which we are excluding persons with syphilis, viz., lead. We have had trouble in the past with lead incidence in general paresis. Lead does attack the spinal nervous system. Many are not in position to know how little the central nervous system is involved. Carbon disulfide attacks the central nervous system. We have excluded our syphilitic employees from these operations. We also exclude them from the handling of cellophane but not because there is any possibility of transmitting syphilis by handling cellophane. Cellophane is used in wrapping bread and different foodstuffs, and there are many who would like to broadcast a whispering campaign that

syphilitic persons are employed in the manufacturing of cellophane which is used for wrapping food—so watch out! Until the public is educated, we must protect sales interest. Dr Osborne mentions spinal fluid tests, here I agree with him. This should be done by the physician taking care of the case. We have in some cases persuaded the employee to allow us to do it. At the present time it depends on the cooperation of the employee. Here are just a few figures—in a group of 4,000 people, executive and clerical type, in 1935, incidence was 2.2 per cent, in 1939 it was 0.71 per cent. In the southern plant in 1935 it was 4.9 per cent, in 1939 it was 0.80 per cent. I wish to call your attention to the fact that we do not employ very many Negroes in the plant. I should like to point out the fact that it is sometimes difficult to get accurate laboratory reports. (We have had to establish our own laboratory.) As a suggestion, in order to check on your laboratory, send two or three samples of blood from the same person under different names and see the results.

Dr Herman Goodman, *New York City*—I should like to ask how many people in industry have the same type of failure of heart that we find among persons with syphilis, especially

those doing heavy work, known as traumatic heart trouble. Paretics are fired without pension rights—thrown out of employment. Paretics are often very valuable employees. A president of a large drug concern, whom I am treating is a paretic.

Dr Osborne (Concluding Remarks)—I have nothing but admiration for the du Pont Company in eliminating persons with syphilis from handling cellophane. Spinal fluid tests should be done by the family physician instead of by the company. All physicians should make spinal fluid tests in syphilis cases.

In connection with the remarks of Dr Rosenthal, I think that in this syphilis program in industry the individual benefited the most is the employee himself. It is true industry will gain, but the ultimate individual who will gain is the syphilitic employee. The bugbear of syphilis cases are those lost track of—the shifting or migrating worker. One-third of all patients with early syphilis, in state hospitals or free clinics, complete the first year of treatment, two-thirds shift from one state to another and we lose track of them. It is this two-thirds in whom we are interested in order to prevent the transmission of the disease.

ARKANSAS CRACKS DOWN ON QUACKS

It is cleanup time in Arkansas, and narcotic addicts, quack doctors, shyster lawyers, bookies, honky-tonk operators, and political grafters are fleeing before the wrath of reform groups, says a press dispatch from the state capitol.

Most of the bousecleaning work is being done by state organizations through purges of their own ranks, with federal officers aiding wherever possible.

Arkansas only recently became aware of the fact that the state was fast gaining a bad name throughout the nation as the result of vice conditions due to lax laws and indifference of the public to law violations.

It was disturbing to members of the medical profession when Dr Morris Fishbein, editor of the *Journal of the American Medical Association*, in a public address labeled Arkansas as "a great stomping ground for quacks."

Doctors and hospitals offering "sure cures for cancer," gland rejuvenation, short-cut treatments for venereal diseases, and other questionable remedies were moving into Arkansas after being forced to leave other states.

The Federal government nabbed the operator of a cancer hospital that had been attracting patients from every part of the nation and convicted him on a mail fraud charge.

The Arkansas Medical Society already had begun to study the statutes to determine what legal action could be taken to keep out the quacks. Quietly the doctors started a movement to bring about more rigid enforcement of the existing laws and to enact new statutes to replace those inadequate for protection of the profession.

STUTTERING NOT JUST A BAD HABIT

Stuttering is not just a bad speech habit that can be overcome by means of speech exercises but is a symptom of basic nervous and emotional turmoil, Dr James Sonnett Greene, New York City, declares in the June issue of *Hygiene, The Health Magazine*. Thus, the treatment of the condition requires a far-reaching program in which speech training is the least important part.

The treatment of stuttering is best undertaken at a special clinic, but, because such facilities are extremely limited, the responsibility usually falls on parents and teachers. In suggesting ways in which these persons may help the stuttering child to overcome his difficulty, Dr Greene points out that, because such a child's psychomotor efficiency is on a lower level than the average, it is a mistake to attempt to make him conform to the regulation environment.

"The teacher or parent must not set up arbitrary standards for him on the basis of what the normal child can be expected to accomplish," he says, "but rather should credit such a child according to his individual capacities. In other words it is necessary to fit the environment to the child. On the physical side, this process begins by having him do everything slowly and easily and by instituting a regimen of rest and relaxation."

"The teacher and mother must also try to develop the child's sense of coordination and rhythm."

"While the child should be encouraged to talk, he should not be made to do so. The parent and teacher should concentrate on his abilities and not on his disabilities."

AN OUTBREAK OF TYPHOID FEVER ASSOCIATED WITH A TRAILER CAMP

PAUL A LEMBCKE, M D , Rochester, New York, and PHILIP J RAFLE, M D , Syracuse, New York

(From the New York State Department of Health, Albany, New York)

THE recent advent of the house trailer on the American scene has caused concern on the part of many public health officials.^{1,2} It has been feared that the trailer might be parked in whatever surroundings should please the fancy of its occupants and that, because of its occasionally primitive sewage disposal facilities, springs, wells, or water-sheds might become polluted or at least a public nuisance might be created. The danger of increased morbidity in the trailer population because of crowding and the common use of water, milk, and food supplies of unknown safety and the increased risk of fatal outcome of illness, injury, and childbirth in the unsuitable quarters of a trailer have been pointed out. The possibility of widespread dissemination of disease by unrecognized cases and carriers among trailer occupants, who may locate at places as far apart as two hundred or more miles on successive days,³ has also been recognized.

Fortunately not all of these potential dangers have been realized. The demand of trailer owners for a source of electric current for lights, radio, cooking, and heating and the desire for the comforts of shower baths and other accessories of modern life have brought about the aggregation of trailers at places where these facilities may be had at reasonable cost. This fact brings most of the trailer population of New York State under the regulations of the State Sanitary Code. The supervision by health officials of such camps with regard to water, milk, food supplies, garbage and sewage disposal, and compulsory notification and isolation of cases of communicable disease may be responsible for the fact that until

the summer of 1938 no outbreaks of disease were known to have occurred in New York State due to the trailer population or associated with trailer camps.

On August 28, 1938, however, the health officer of the village of Lakewood notified the Jamestown District Office of the New York State Department of Health that several individuals in a trailer camp on Chautauqua Lake were ill of a disease that he suspected of being typhoid fever. Investigation of the camp on the same day disclosed 8 cases of typhoid fever among 22 individuals who, in four related family groups, had been touring this section of the country in four trailers. Two families were from Rhode Island, one from Texas, and one from Louisiana.

Preceding the onset of the first case, this group had stayed at trailer camps as indicated in Table 1. Suspicion was focused on the Oswego trailer camp since nearly all of these patients gave a history of fever and abdominal pain while encamped there. They also stated that the women's toilets were out of order and that the camp water supply was low during their stay there. The district state health officers having jurisdiction over the areas in which the New York State camps were located and the Pennsylvania State Department of Health, which had jurisdiction over the Mansfield camp, were at once notified and asked to conduct an investigation.

The epidemiologist of the Syracuse District learned on August 30 that an employee of the trailer camp near Oswego was ill with fever of unknown origin—onset August 26. Within a few

TABLE 1—PLACES VISITED BY GROUP OF TOURISTS IN FOUR TRAILERS INVOLVED IN TYPHOID FEVER OUTBREAK

Dates (1938)	Location
July 12-13	Ithaca N Y
July 13-25	Olean, N Y
July 25-Aug 1	Batavia N Y
Aug 1-8	Oswego, N Y *
Aug 8-15	Geneva N Y
Aug 15-19	Mansfield, Pa.
Aug 19-	Lakewood, N Y **

* Location of trailer camp where infection occurred

** Location of trailer camp where diagnosis of typhoid fever was established

days a diagnosis of typhoid fever was established in this patient. Several other cases of typhoid fever in the state were found to give a history of having patronized the Oswego camp, and there was little doubt that this camp had given rise to the outbreak. From the very imperfect registration records of the camp the investigation was extended as well as could be to residents of other states. In all, 18 cases of typhoid fever were found to have occurred among persons who patronized this camp during the first ten days of August. It is possible that more than 18 cases may have occurred, since it was impossible to learn the identity of and to follow up all who may have stayed at the camp in that period. Of the other persons known to have visited the camp during this period but who did not develop typhoid fever, 12 gave a history of gastroenteritis immediately following their stay.

Table 2 shows the permanent residence of each of the patients and indicates how widely infection may be spread from a source such as a trailer camp. It also suggests that a common source of infection was present (at least at intervals) over the period August 2 through August 9.

The cases were all clinically severe, and 3 deaths occurred in this group of 18 patients. Two patients, both women of middle age, became chronic fecal typhoid carriers.

The possibility that food may have been the vehicle of infection common to all the cases was ruled out by the fact that several of the patients ate no food at the camp, no community meals were served, and the food supplies used by the several families involved were purchased

from several different sources. Milk as the source was also eliminated, because 4 patients drank no milk at the camp and because no other cases were known to have occurred among the several hundred other patrons of the dairy that furnished bottled pasteurized milk to 10 of the typhoid fever patients.

The well that supplied unfiltered, unchlorinated water to the campers was found to be located in fissured limestone rock. This had been noted during its construction in May, 1938, when drilling operations produced turbidity in the waters of Lake Ontario, 250 feet distant. Unfortunately, the significance of this observation had not been appreciated by the driller or owner, who failed to report this to the health officer, and consequently no steps were taken to relocate the well or to apply a continuous process of purification. Two cesspools, a pit privy, an open-joint line from flush toilets to the cesspools, a lavatory seepage pit, and a septic tank were located within 166 feet of the well.

During July the owner of the camp noticed that a cesspool 166 feet distant from the well had overflowed and that sewage was oozing to the ground surface. Because of this, a new cesspool was installed late in July, 111 feet from the well. During this period a pit privy about 125 feet from the well was used. Also at this time the water supply was running low, and the intake pipe in the well was lowered 2½ feet. This combination of changes apparently permitted pollution of the well, as evidenced by the illness that followed and by the finding of large numbers of organisms of the coliform group in the well water. The carrier or unrecognized case whose discharges containing typhoid bacilli ultimately found their way into the camp water supply was not discovered.

No cases of illness are known to have occurred among persons visiting the trailer camp for the first time subsequent to August 9. Cessation of the outbreak prior to and independent of action by public health officials was presumably due to removal of the human source of

TABLE 2—TYPHOID FEVER CASES ASSOCIATED WITH TRAILER CAMP NEAR OSWEGO NEW YORK, 1938

Individual	Permanent Residence	Age	Sex	Dates in Camp	Date of Onset	Outcome
1	Oswego N Y	18	F	Aug 3	Aug 8	Recovered
2	Oswego N Y	41	F	Aug 6	Aug 18	Carrier
3	Titusville Pa.	40	M	July 31 or Aug 1	Aug 16	Died
4	Titusville Pa.	38	F	July 31 or Aug 1	Aug 17	Died
5	Flint Mich	54	F	Aug 2-3	Aug 20	Carrier
6	Canandaigua N Y	7	M	Aug 4	Aug 21	Recovered
7	Providence R. I	27	M	Aug 1-8	Aug 21	Recovered
8	Monroe La.	12	M	Aug 1-8	Aug 21	Recovered
9	Providence R. I	38	F	Aug 1-8	Aug 22	Recovered
10	Winsted Conn.	63	F	Aug 1-8	Aug 22	Recovered
11	Monroe, La.	10	F	Aug 1-8	Aug 22	Recovered
12	Monroe, La.	7	F	Aug 1-8	Aug 23	Recovered
13	Texas	7	F	Aug 1-8	Aug 24	Recovered
14	Oswego N Y	12	F	Aug 9	Aug 25	Recovered
15	Oswego N Y	17	M	May 30-Aug 30	Aug 26	Died
16	Providence R. I	6	F	Aug 1-8	Aug 29	Recovered
17	Texas	6	F	Aug 1-8	Sept. 2	Recovered
18	Frankfort, N Y	23	M	July 5-Aug 12	Sept. 10	Recovered

infection or the natural erection of a barrier between the cesspools and privies and the well-water supply. Reliance upon such imperfectly understood factors to prevent the further occurrence of disease was obviously unjustified, especially in view of the fissured limestone in which the well was located. Accordingly, the use of the well was discontinued, and the camp was provided with water from a nearby municipal supply.

Comment

This outbreak of typhoid fever is remarkable chiefly because it is the first known outbreak of communicable disease in New York State associated with a trailer camp. The outbreak is believed to have resulted from the excreta of a typhoid case or carrier transmitted through the camp sewage disposal system to the well serving the trailer camp. Fortunately for the public health, widespread dissemination of disease by the trailer population apparently did not occur. That such might have occurred is shown by the experience with the group of cases discovered in the Lakewood trailer camp, all 9 of whom showed typhoid bacilli in fecal specimens. Following infection at Oswego, this group spent seven days in Geneva, four in Mansfield, Pa., and nine in Lakewood. Had they pitched an informal camp on a watershed serving a municipality with raw water or had there been unsafe sewage disposal facilities or water supplies at the trailer camps they patronized, a

very considerable spread of typhoid fever might have taken place.

The occurrence of a considerable number of cases of illness in a trailer camp raises administrative problems for the health officer. In instances such as that in Lakewood, where individuals in trailers are ill and isolation on the premises is impracticable, it may be necessary to invoke the provisions of the New York State Sanitary Code, which give the health officer authority to remove the patient to a suitable hospital. The indigent are another problem, the community in which a case is diagnosed is immediately responsible for what may be rather large medical and hospital expenses with subsequent reimbursement to be obtained, if possible, through the state welfare agency from the place of the patient's legal settlement. The possibility of financial loss to the owner of the camp is a real one. Not only may the camp be closed or suffer great loss of trade for the remainder of the season but patients may institute suit to recover financial damages sustained.

The solution to the problem of disease among and spread by the trailer population would seem to lie chiefly in preventive measures based upon adequate supervision of trailer camps and education of camp proprietors and tourists. An excellent outline of the rules and regulations that should govern the operation of such camps has been formulated by the Joint Committee on Summer Camps and Roadside Places of the Conference of State Sanitary Engineers and

the Public Health Engineering Section, American Public Health Association.² Proprietors of camps should be thoroughly instructed in the possible disastrous results of making unauthorized changes in water or sewage systems

Summary

1 Eighteen cases of typhoid fever and 12 additional cases of gastroenteritis are known to have occurred among individuals patronizing a trailer camp near Oswego at some time during the period of August 2 to 9, 1938

2 Three deaths occurred in the group of 18 typhoid fever cases. Two of the survivors became chronic typhoid carriers

3 The source of infection was determined to be a well, located in fissured

limestone and subject to pollution by nearby cesspools and privies

4 The possibility of wide dispersion of disease contracted at a place such as a trailer camp is illustrated in this outbreak by the fact that the permanent residences of the typhoid fever patients included seven different states and the fact that many of the cases visited several other trailer camps during the incubation period and early stages of their illnesses

References

- 1 Eighth Annual Yearbook 1937-1938 A. P. H. A. Am. J. Pub. Health Supplement 28 2 132-137 (Feb) 1938
- 2 Ninth Annual Yearbook 1938-1939 A. P. H. A. Am. J. Pub. Health Supplement 29 2 104-109 (Feb) 1939
- 3 Trailer House Statistics for August 1937 and 1938 Yellowstone National Park. Quoted from appendix to reference 2 above

TRAINING MEDICAL STUDENTS FOR WAR SERVICE

A London hospital medical school has organized classes for training students in war service outside their regular medical studies. Hundreds have responded and are taking the course. The program includes

Clinical Students

- 1 Hygiene and sanitation, with special reference to refugee problems
- 2 First aid and casualty work.
- 3 Anti-gas training and treatment

Preclinical Students

- 1 Weapon training
- 2 Elementary tactics and map-reading
- 3 First aid
- 4 Anti-gas training

AMERICAN COLLEGE OF CHEST PHYSICIANS

The New York State Chapter of the American College of Chest Physicians was organized at the time of the annual meeting of the American College of Chest Physicians, held at the Biltmore Hotel, New York City, June 10, 1940. Dr. Edgar Mayer, New York City, was elected president, Dr. Nelson W. Strohm, Buffalo, vice-president, and Dr. Arthur Q. Penta, Schenectady, secretary. The New York State Chapter of the College has applied to the National Association for a charter.

Dr. George G. Ornstein, New York City, was elected governor of the College for New York State and Dr. Edward P. Eglee, New York City, former governor of the College, was elected a regent.

The New York Chapter of the American College of Chest Physicians will meet at the time and place of the annual meeting of the New York State Medical Society

THE BEARD AS A PROTECTION AGAINST CATARRH

"A Cambridge M.D." writes to the *British Medical Journal*. "I was subject to frequent attacks of severe laryngitis, with firm almost cheesy secretion and choking distress, until I took the advice of a sensible practitioner and grew a beard (He had done so himself). That was thirty-eight years ago, and I have had no such attack since. But the protection by the beard is not merely against cold. The attacks of laryngitis occurred in the hottest summer weather, as well as in winter. The explanation may be that the larynx and the overlying skin being both supplied by the fifth nerve, the constant irritation by shaving may affect the nerve injuriously at its source—for example, the nerve cells in the gaserian ganglion—rendering it less resistant to the attacks of disease germs."

PREVENTION OF WOUND INFECTION—CHEMOTHERAPY

Late deaths due to wounds are almost invariably caused by infection. An article by Buttler published in *Lancet* [1 890 (1940)] points out that any measure which will prevent or cure streptococcal infection and gas gangrene would greatly reduce this mortality.

Although chemotherapy is not a substitute for removal of damaged tissue or drainage of infected parts, it may, nevertheless, prevent the spread of infection to other tissues and, by inhibiting the multiplication of bacteria, assist the defensive mechanism to clear up the infection. The sulfanilamide drugs have more chance of being effective against invading bacteria if given immediately after wounding, and they may be administered both by mouth and locally into the wound. It is anticipated that by this means the extensive amputations commonly necessary in the last war may now be largely avoided in this war.

THE INCIPIENT PSYCHOSES AND THE GENERAL PRACTITIONER

B LIBER, M D, Dr P H, New York City

(Out-Patient Department, New York State Psychiatric Institute, and Director, Mental Hygiene Clinic
New York Polyclinic Hospital)

I AM speaking before an audience of neuropsychiatrists about a subject too elementary for them, but I am taking this occasion to address myself to the general practitioner who, whether he likes it or not, is forced to meet psychosis in his work.

The psychotic cases he sees, however, are usually not of the advanced type but represent mostly some incipient forms belonging to the immense field situated somewhere between mental health and mental disease. It is important before we go further to bear in mind that the term "incipient," while expressing exactly our idea about these cases, has the fault of implying progressiveness, which is not necessarily the rule. That is why I prefer to call them *mental transition cases*.

Without training or without at least thinking about their occurrence, the practitioner can easily overlook them, misunderstand or misinterpret them, and so come to erroneous diagnoses and therefore derive a mistaken or incomplete therapy. They can present the following possibilities: psychotic symptoms only, or psychotic and somatic symptoms frankly combined, or a physical disease concealed by mental symptoms, or, finally, a mental disease simulating a physical condition.

In the brief time at my disposal it is impossible to enter into any theoretical considerations. I shall give in a condensed form some illustrative examples from life, taken at random, of cases that at first had actually come to the general practitioner.

Case Reports

Case 1—A man, aged 26, had temporarily suffered from a real heart trouble and was well

treated for that. But his mental state, about which something could easily have been learned, was ignored. He remained unadjusted and depressed, he lost confidence in himself and behaved so that he disappointed his sweetheart who, therefore, left him, which increased his difficulties. In addition to that he felt frustrated because of his economic situation that did not permit him, a high-school graduate, to continue his much-desired studies. In spite of all the assurances of his doctor he never believed that his heart was cured.

Case 2—A young girl was treated for persistent vomiting, first by her family physician, then by a gastroenterologist, and later again by her family doctor. All tests and examinations were done, but they failed to yield the secret. This vomiting, however, began a short time after the death of her stepfather. It was not difficult to discover that she had been in love with him and that she missed him very much. The most superficial analysis would have disclosed that fact and all the details. Indeed she was eager to open her heart to anyone in whom she had confidence.

Case 3—A young man's prostate had been treated by a conscientious physician, who, however, never inquired into the mind of the patient. When the treatment was discontinued as being no longer necessary, the patient (dissatisfied and, through a sort of inertia, believing himself still sick) applied to a second, to a third, and to a fourth doctor. One of them treated him, the others refused. None understood his deeper psychic tendencies, his psychoneurotic apprehension. Any one of them could have cured him or helped him to adjust himself, had they known how to speak to him.

Case 4—A single woman, aged 45, living with her 80-year-old mother, whose only support she was, had worked in a bindery since she was 20 years of age. Always happy, jolly, witty, she was regarded as "the life" of the shop and as "the soul" of her modest social gatherings at home and at those in her friends' houses. Everybody sought her advice which she gave unstintingly, like a benevolent matron. She was

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New York City, May 7, 1940

liked in spite of her physical unattractiveness. But one day an *accident* happened to her at her working place. One of her fingers was injured by the machine, and she was laid up. Her physician treated her excellently and the wound, which healed within a month, was surprisingly benign and left no bad effects. In another month she was able to go back to work, so her doctor told her—and he was right as far as her finger or hand was concerned. But he was greatly astonished to see her disabled from another point of view, and he had no idea what to do about it. He had not known that an injury to the body might result in an *injury to the mind*. Several elements were involved in this situation: first, the fear of the machine and of the shop, the fear that the accident might happen again, then the awakened thoughts about her life. Having plenty of time to think, she was dissatisfied with her fate. She was what is called an "old maid," had never had a love affair, had always been poor, and she was wondering what she would do when permanently unable to work. As she had never left her mother who was visibly declining, how would she arrange her life after her mother's death? She was badly depressed, had lost her interests and will-power, and was unable to find her previous equilibrium and springiness. The general practitioner could have done what the mental hygienist has done—restore her to a more or less normal or rather adequate condition that made it possible for her to return to work in the same shop. Even if this does not mean a real or perfect cure—nobody could prophesy that—even if she might break down at some untoward event, for the time being she has recovered.

Just as the cure after an accident is not always the end, so the healing of an organic disease may be only the beginning of a case. The *mental trauma* caused directly or unloosed indirectly by the physical trouble may be more difficult to eradicate—in any case it cannot be ignored. By proper management it might be anticipated and averted or attenuated by the physician closest to the patient at a time when total or partial prevention is still possible.

Case 5—A man, aged 40, always in high spirits, a skilled mechanic and good provider for his family, had suffered from some internal disorder, had fully recuperated, and was physically well for the last two years. But either he had lost confidence in himself or perhaps, unknown to him, he had had a hatred for his occupation and, once freed from it, his conscious self could not vanquish the deeper inhibition. The fact is that he was derailed and unable to gather enough mental force or decision to resume his

work and to re-enter normal life. He said "I can't seem to get a grip on myself, I'm not myself, my whole body is going dead," and other words to the same effect, so well known to students of mental ailments. He imagined that something was bound to happen to him. The usual vicious circle in such cases developed. He felt unable to work, and then he worried because he was not working, which only added fuel to the fire. The sentiment of insecurity, whether within the individual, in his relationship with his immediate environment, or due to social and economic conditions, frequently results in psychoneurotic or manic-depressive states, more so in certain predisposed persons. And so it did in this case.

Case 6—And here is a case where a *physical* sickness was disregarded. A woman, aged 47, with two children, aged 20 and 17, complained about *insomnia*. She wept during the consultation, and she was crying day and night. Her menopause had occurred eight months before and her husband, for whom she cared much, had left her for another woman at about the same time. The first physician whom she saw stamped her with the vague diagnosis of *involutional depressive psychosis* and, finding it useless to explore into her physical condition, brought her to a psychiatrist. The latter, relying on the practitioner, did not examine her physically. He changed somewhat the name of the disease but kept it within the same chapter and gave instructions to the colleague how to handle the case. But the condition became worse when her two brothers, one sister, and her mother, after a long illness, died within one year. The patient always enumerated many physical symptoms similar to those encountered in psychoneurosis, and her doctor, with his mind centered upon the patient's mental condition, ignored them. When it was reported to him that a few times she had had short attacks of "fainting" or unconsciousness, he ascribed them to hysteria. All these phenomena could be so logically and comfortably explained by her mental state, he would have felt foolish to suspect anything else and to acquaint himself deeper with the condition of her body. But logic, used alone, is a bad counselor and interferes with impartial observation and the study of facts. Another psychiatrist, seeing that the woman was 50 pounds overweight, examined her closely, and the result was, among other important facts, that her blood pressure, while not extremely high, was a good deal above normal, that her urine contained a high percentage of sugar and some acetone, and that the sugar content in the blood was 350 mg per hundred cubic centi

meters Her attacks of unconsciousness proved to be those of diabetic coma and were surely the preludes of worse episodes As she suffered mentally both because of the events in her life and because of her physical disease, no improvement in her psyche was possible until something was done for her tangible corporal ailment While its mere positive discovery had a favorable effect upon the patient, her real improvement, later, helped her much, not only somatically but mentally as well

Case 7—On the other hand, a young woman who was treated in one place for a long time for her disconnected symptoms all related to her digestive function was not improved, until it was detected elsewhere that she was unhappily married and some *modus vivendi* was found Indeed, she complained, but only when asked about her marital situation, that her husband "showed her no love," that he was "repulsive" to her, and that their sexual intercourse occurred very rarely Her formal, conscious, or, let us say, *representative* physical disease disappeared when her partner, called to the clinic, made certain concessions and when both agreed to patch up their lives "for the sake of the children," even though this was not a perfect solution of the problem

Case 8—A general practitioner who had the habit of not speaking to his clients and never explaining anything to them, treated a patient for a slight genital disorder When pressed to at least name the disease, he said "It is a *urethritis*," meaning by that a nonspecific irritation or inflammation. The condition healed quickly and left no trace locally, but the patient remained with the conviction that he had had gonorrhea and for years avoided intercourse with his wife, behaved differently than in the past, became unsociable, developed a feeling of *guilt* which he transported into many fields of his life, made himself and his family unhappy, and incidentally, ruined his business by neglect, A good deal of eloquence was required to make him see the truth.

Case 9—A woman who detested her husband and had no sexual relations was under her doctor's care for a *cervical erosion*, but, when he declared her cured and ceased therapy, she was dissatisfied. He would have understood the reason had he investigated deeper into her behavior She was so passionate that her husband, who was but moderately sexed, "only excited" her Hence there resulted fits of temper in general and terrific spells of anger against him during which time she threw things around and broke the furniture and the crockery Therefore there was a need for her being at least

touched and handled and examined by this young physician, while he was entirely unaware of her conscious or semiconscious plan and her desire to be endlessly cauterized and treated with tampons At home she douched herself every day for one hour by an arrangement that permitted a strong stream of lukewarm water to flow into her vagina directly from the faucet, the latter being in immediate contact with the vulva

Case 10—With *psychoneurotics*, wealth is often more of a curse than a blessing One manufacturer, after employing the services of his several physicians with whom he was habitually connected, went to various consultants and private sanatoriums Returning from a Midwestern institution, he brought the "final" written diagnosis of "chronic nervous exhaustion and *functional indigestion*, old mitral endocarditis, also functional" This came as close as possible to his physical condition, but neither the knowledge of that nor the multiple therapeutic measures advised touched the real evil, which demanded a different approach (One of his doctors in this city, not understanding him, was baffled when this patient, after his blood pressure was taken, complained that this procedure "chased the blood to the other arm"—a typical statement so familiar to experts) The more opinions he heard, the more treatments he tried, the worse he felt Did they not confirm and reinforce his own ideas about his body? And whether he knew it or not, he had the right to ask his doctors "Whatever my trouble, organic, nervous, or functional, can I not obtain a cure? Why dismiss me?"

Case 11—A young girl student, treated for true *arthritis*, suffered, as a sort of lengthened shadow, from a light *manic-depressive* psychosis which had not been noticed This, departing from her physical ailment, was complicated by her infatuation for a much older man, their single coition and his refusal to see her further, her fear of her parents if they learned about her misstep, her feeling of guilt, her romantic brooding, and self-pity

Case 12—A girl, aged 18, was properly treated for her *cardiac* condition and her "systolic and diastolic long and loud murmur right and left," as the report read and the examination showed But as this heart trouble, entirely compensated and under control, was congenital, she was somewhat adapted to it, and it disturbed her only at certain occasions Its impact, however, was the reason why her more significant and quite evident *schizophrenic* trends had been overlooked. Fortunately they were still remediable.

Case 13—Little Eddie, aged 8, was suffering

from a pain in the *chest* and despaired his family doctor who tried sincerely but unsuccessfully to help him. Reconstructing the story, we found that one day he had come home from school with that complaint and that the mother, "whose young brother had died of heart disease," had become alarmed, had put him to bed, and had called her physician. The latter found nothing abnormal, but this statement, in the absence of a positive answer to the puzzle, had no effect and was not accepted. All he could do was to prescribe some medicine. The boy was not allowed to go to school, which at first pleased him immensely, or to play except in bed, which displeased him greatly. These were orders given by the mother who tried to complete those of the doctor that to her seemed insufficient. The entire household was tense and, by their behavior, communicated their fear to the child—as is well known, *fear* is more contagious than measles. There was an actual *anxiety neurosis*, and this abnormal situation lasted for three months until the boy was brought to a psychiatrist. Only then the anamnesis was finished. This mother had always praised the "fine" children who had good marks. But Eddie had had bad marks in school, and a girl of his age had teased him. There was a fight and he was hit on the chest. While the effect of the blow had disappeared, of course, within a day or two, the parents created and kept on feeding the child's budding mental disorder. The first physician could have discovered and understood this prologue which shed a clear light on the entire, though tiny and modest, drama which could have been a prelude to a *nascent psychosis*.

Case 14—A man, aged 58, during his wife's illness and sojourn in the hospital, copulated with a young woman who boarded in their apartment. During one of these activities and as a response to the girl's demand, cunnilingual contact was used. Since then he feared all sorts of imaginary diseases and was badly *upset*. As he had really acquired an *eczema* of the chin, he was convinced that this was "syphilis or cancer." His doctor removed it completely by a few treatments, but that did not terminate the case as far as this patient's mentality was concerned. The real treatment was yet to come.

Case 15—Within three years a woman had been taken twice to the hospital by her physician, once for an *appendectomy* and once for a *cholecystotomy*. Both operations were successfully done, but the practitioner found later that her complaints had not subsided. He failed to investigate into her intimate life and to connect her subjective physical symptoms with her mental state, which surgery could not cure.

Case 16—Nor was a patient, aged 35, of superior intelligence, unmarried, in need of sexual intercourse, cured or improved of his chronic *constipation* by ordinary physical therapy. He neglected his trade, stayed at home, masturbated excessively while thinking of the one girl he was interested in and to whom he had never proposed or even spoken. His constipation was his pet illness. He enjoyed talking about it, emitting all sorts of clever and complicated theories about it. His preferred remedy consisted of rectal suppositories. Only a thorough analysis of his entire intimate life could solve the mystery in this case.

Case 17—Nor was there any success achieved in a person treated for his *sinus* disease, in whom the mental condition was disregarded. Since this ailment has become popular among the lay public, it is frequently linked with psychoneurotic complaints, in which respect it shares the fate of other physical disorders.

And so on and so forth—*ad infinitum*.

Remarks

These humble cases may all seem uninteresting or unimportant if compared to the more advanced and more spectacular ones. But I feel that they need even more attention first, because they are seen everywhere and their number is legion, and secondly, because, by knowing them, the more developed conditions can, under favorable circumstances, be prevented. This is one of the phases of preventive medicine.

It is incumbent upon every physician, no matter what the nature of his work, to have at least a smattering of the mental diseases or to be acquainted in some degree with their incipient or transitional forms and to be prepared to recognize the *mental complications combined with any ailment*. He should look for the roots of psychosis in child-upbringing, adolescence, marital and sex life, social environment, and economic problems. This would clarify the diagnosis in many cases, would help the therapy, and would make the prevention of further inroads into mental disturbance more possible.

207 West 106th Street

Discussion

Dr Nolan D. C. Lewis, *New York City*—Since it is estimated that 1 in every 20 persons

at some time during life develops a mental disorder, it is quite clear that Dr Liber's statement to the effect that every practicing physician will be confronted by and must come to grips with these problems on numerous occasions during his career is adequately supported

It is particularly important that the early manifestations of mental disorder be recognized in order to protect the family and society and to afford the patient the optimum chance for successful therapeutic applications. Nowadays, with the emphasis placed on so-called "psychosomatic" medicine in most of the large medical schools, the student, comparatively early in his clinical contacts, becomes acquainted with the effects of emotions on bodily functions and is far more alive to the importance of the activities of the mind than the student of twenty-five years ago

Too long it has been the tendency of medical men to diagnose neuroses and psychoses by elimination—that is, attempting to reach a diagnosis of mental disturbance after the presence of all possible physical disorder is ruled out. This is unscientific medicine. Neuroses and psychoses have their positive signs and symptoms and characteristic reactions that are as definite to the expert in psychiatry as any group of physical signs and symptoms are to the internist

The general practitioner should know some of the more important reaction types. It might be said that there are three principal emotional reaction types which are frequently seen in the office of the general practitioner or at the home of the patient: (1) those persons with mental depression who complain of various physical discomforts, either diffuse or localized, which usually serve as cover reactions or manifest themselves as a part of a depressive process; (2) those persons with anxieties involving the function of the heart, the stomach, the intestines, or other organs of the body which become the focus of attention; (3) those persons with neurasthenic and hypochondriacal more or less fixed ideas, whose life plan is characterized in part by shopping about from one physician to another for the relief of discomforts of emotional and even of delusional origin. The earlier the practitioner is able to recognize, diagnose, and advise these patients the more scientific and efficient will be his practice and his function in the community. The organic reaction types and the frank psychoses when once developed are usually recognized and treated as such

In numerous cases these reactions are the gradual cumulative results of distorted emotional situations that begin in early childhood. If this could be directed and treated early by the family physician, it is probable that many could be saved from a complete breakdown later in life, and thus the central aim of all medicine—namely, prevention—would be supported

Dr Bernard Glueck, *New York City*—On the basis of a few simply recited clinical studies which largely speak for themselves, Dr Liber succeeded in covering the entire "Kingdom of Evils," as one sees it reflected in the daily practice of the psychiatrist. This Kingdom of Evils as defined by the late Dr Southard, embraces disease and defect of body and mind, educational deficiencies and misinterpretation, vices and bad habits, legal entanglements, and, finally, poverty and other forms of resourcelessness. Singly or in various combinations, these evils that beset mankind lead sooner or later to an intolerable sense of frustration which brings the victim within the purview of the psychiatrist. What these histories reflect, and they have obviously been selected just as much with prevention in mind as well as cure, is individuals struggling in the grip of one or more of the aforementioned evils and urgently in need of a guiding hand which might lead them toward a better adjustment

Dr Liber's manner of approach is obviously an intentional simplification of the problem. Nevertheless, it is true that, frequently, a little kindly help will go a long way toward making possible a healthy adaptation to difficult situations. The important thing is to rekindle and keep alive the will to recovery.

The general practitioner must recognize that in addition to a healthy physiologic integration and functioning man requires other satisfactions of a personal and biologic character. He must have a certain minimal degree, at least, of security and opportunity for new experiences; he must have recognition as well as response; otherwise his sense of self-esteem suffers to a greater or lesser extent and with it the recuperative qualities. Finally, as doctors to whom these problems come for solution we must appreciate that equipment alone may not suffice in the face of a lack of adequate opportunity.

Medicine as it is envisaged today, especially psychiatry, has to pay heed to the social implications of personal maladjustments as well as to the physical ones

There is no reason for tuberculosis to be five times more prevalent in some communities than it is in others.—*Thomas Farran, M D*

The lowest infant death rate in the nation's history was recorded in 1939, according to preliminary tabulations by the Census Bureau

THE PREMATURE INFANT

A Statistical Study

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THE prematurity situation has become a real public health problem as it affects the neonatal mortality of every state. The incidence of premature births varies from 3 to 7 per cent, and this small percentage contributes at least one-third to one-half to the entire neonatal mortality. This figure, indicating the low vitality of the premature, presents a problem that is a challenge to all who would lower this mortality rate. Dr. Hess¹ of Chicago has accomplished striking results in lowering the premature mortality rate in that city. His work has inspired many throughout the country to do the same type of study in their respective cities.

In Albany, New York, at the Brady Maternity Hospital, where 48.1 per cent of all Albany babies are born, we have felt the need for a premature department to give special care to the premature infant. Until the year 1938 our prematures were cared for in the general nurseries. In 1938 a newly equipped premature unit was established, where both private and service cases receive special care under a premature-minded staff.

This premature unit consists of a large, well-ventilated room equipped with open, heated cribs, a Hess incubator, suction apparatus, oxygen tanks, and equipment for the general care of premature infants. The humidity is regulated by jets that allow live steam to enter the room until the desired humidity (40 to 50 volumes per cent) is reached. The room is entirely separated from the other nurseries so that there is the least possibility of infection. Formulas are prepared in the room by the supervising nurse.

The supervising nurse has been trained at Sarah Morris Hospital in Chicago and is well prepared to manage the nursery and to teach student nurses, graduates,

and postgraduates the required technique for these small infants.

The members of the pediatric staff have taken a keen interest in this phase of the newborn and are in charge of the medical care of the nursery.

Along with the opening of this unit, a study of the records of all the prematures born at the Brady Hospital during the years 1934 through 1938 has been made. These cases include both service and private patients. An effort was made to record the causes of premature births as well as the causes of death of these infants. The purpose of this paper is (1) to summarize the results of the years 1934 through 1937 to be known as group "A" and compare them with the year 1938, which we shall call group "B", (2) to form a basis for a new study that may be made in the future so that we may compare our observations and study our progress, (3) to encourage other hospitals to make similar studies with the idea of improving their own rates, eventually resulting in the reduction of premature mortality in general.

This series includes all the prematures born alive from January, 1934, through December, 1938. Table 1 shows the number of babies born in the city of Albany as compared to the number born at the Brady Hospital, also the number of prematures born at the Brady Hospital, and, finally, the percentage incidence of prematures.

There were 12,335 infants born in Al

TABLE 1—INCIDENCE OF PREMATURE BIRTHS AT BRADY MATERNITY HOSPITAL

Years	Infants Born in Albany	Babies Born at Brady	Pre maturities Born at Brady	Prema tures at Brady
Jan. 1934 to Dec. 1938	12,335	5,840	204	3.47%

TABLE 2—COMPARISON OF GRAVIDA WITH NUMBER OF PREMATURES

Gravida	I	II	III	IV	V	VI	VII	VIII	IX	X
Number of prematures	90	45	22	11	6	3	3	2	1	2
Mortality	44%	35%	36%	45%	68%	33%	100%	0	0	100%

TABLE 3—NUMBER OF CASES BY MONTHS

Jan	Feb	Mar	Apr	May	June	July	Aug	Sept.	Oct.	Nov	Dec.
9	13	12	18	18	14	17	21	24	25	13	21

bany during these five years, and, of these, 5,840 were born at the Brady Hospital. Thus, 48.1 per cent of all live births are delivered at this hospital. We can safely say that this figure represents a rough cross section of all the babies born in this city. Of this number, there were 204 prematures weighing 2,500 Gm or less at birth. This study includes only those infants falling within this weight group. Stillbirths have been excluded from this study. The incidence of prematurity was 3.47 per cent, and this figure is in agreement with that found by other investigators. Wilcox² reported 3.24 per cent, Gleich,³ 4.5, Smith, Andrews, and Lumper,⁴ 7, and Hess,¹ 3.8.

Most studies report a greater percentage of girls over boys, whereas this was the reverse in our series. We had 112 boys and 91 girls. No definite explanation can be given for the greater incidence of one sex as compared to the other. However, our mortality rate of 44.6 per cent for boys and 39.5 per cent for girls is in accord with Wilcox² who found a higher mortality among boys than girls. Hess and Chamberlain⁵ report a mortality of 60 per cent in boys and 48 per cent in girls. Blackfan⁶ also found that the mortality rate for premature boys is higher than for premature girls in every weight group. From these figures, one is led to believe that the girl has a greater degree of vitality and is better able to accommodate herself to the surrounding environment.

Grouping our cases according to the number of pregnancies of each mother, we find, as would be expected, more prematures born to gravida I than to gravida II, more to gravida II than to gravida

III, etc. This is shown in Table 2. The mortality percentage for each group is also included.

The number of cases of prematurity for each month of the year was summarized for the five-year period. The months of August, September, and October showed the largest number of these infants born. This is shown in Table 3.

Our only explanation for the greater number of premature births during the above three months is that mothers may be more active during the moderately warm months and thus deliver prematurely. Otherwise, these figures are of interest only from the standpoint of seasonal incidence.

An interesting part of this study has been the comparison of prematures born on the service with the private cases. We had 83 service and 117 private cases. For the entire series, the mortality percentage for service cases was 45 per cent and for private cases, 42 per cent. In 1938 the mortality rate for service cases was reduced to 31 per cent and for private cases, 22 per cent. We attribute this reduction to the fact that the premature infants are now sent to the special premature department and receive routine care. In a series studied by Dunham and McAlenney, Jr.,⁷ the mortality was 30 per cent for private cases and 26 per cent for ward cases.

The duration of pregnancy and its relation to the number of survivals was studied in four groups as shown in Table 4. The number of prematures increases markedly from 8 at five months to 68 at eight months.

The older the infant the greater the vitality and the higher the percentage of survivals. There were no survivals for

TABLE 4—DURATION OF PREGNANCY WITH PERCENTAGE OF SURVIVALS FOR ENTIRE SERIES

Month	Number	Survivals
5	8	0
6	37	54%
7	88	60%
8	68	82%

TABLE 5—PERCENTAGE OF SURVIVALS ACCORDING TO WEIGHT

Weight in Gm	Survivals for Group "A"	Survivals for Group "B"
Under 1 000	0	0
1,001-1 500	9 1%	20%
1,501-2 000	50%	75%
2 001-2,500	79 8%	94 3%

TABLE 6—MORTALITY PERCENTAGE BY YEARS

Year	No	Living	Dead	Mortality
1934	35	15	20	57%
1935	27	12	15	55%
1936	42	20	22	52%
1937	42	26	16	38%
1938	58	44	14	24 1%

TABLE 7—MORTALITY PERCENTAGE ACCORDING TO WEIGHT

Weight in Gm	Mortality for Groups A'	Mortality for Groups B'
Under 1 000	100%	100%
1,001-1 500	90 9%	80%
1,500-2,000	50%	25%
2 001-2 500	20 2%	5 7%

the five-month group, while at six months our group showed a 54 percentage of survivals and at seven months the rate jumped to 60 per cent with the highest rate of 82 per cent at eight months

In Table 5 a comparison is made of the percentage survivals according to weight of group "A" and group "B"

We had no survivals of prematures weighing less than 1,000 Gm in either group. As the weights increase, the survivals increase. In group "B," where the infants were cared for in the premature room, the percentage of survivals is higher for every weight group. Our figures in group "B" compare very favorably with the results obtained by other workers and leading hospitals that have given special care to the premature infant.

Mortality

The gross premature infant mortality for our series of 204 cases was 42 per cent. The mortality rate for the year 1938 was reduced to 24 1 per cent. Table 6 shows the mortality percentage according to years. There was a steady decrease in the rate from 1934 through 1938.

In the year 1937 the staff at the Brady Maternity Hospital became more premature minded, and a greater effort was made to save these infants. As a result, our mortality has been lowered from 57 per cent in 1934 to 24 1 per cent in 1938. In the latter year we had a greater number of babies of less than 2,500 Gm, yet our rate was greatly reduced. This can only be attributed to the most con-

scientious efforts of the pediatric, obstetric, and nursing staffs working in unison with only one purpose in mind—that of reducing the premature mortality rate.

When we compare our rate of 24 1 per cent for 1938 with that of other investigations, we feel that Brady Hospital now offers the most modern care that can be given to these small infants.

The mortality rate of other investigators varies as follows: 38 per cent (Chiford⁸), 28 5 (Wilcox⁴), 24 1 (Hess¹), 31 (Smith⁴), and 27 (Dunham⁷).

The mortality rate according to weight for groups "A" and "B" is shown in Table 7.

The result of one year's operation of the new premature unit has been a greatly reduced mortality percentage for every group except those babies under 1,000 Gm. For babies of 1,001-1,500 Gm, our rate was reduced to 80 per cent. The rate for babies between 1,501-2,000 Gm was cut exactly in half. For those between 2,001-2,500 Gm, the rate was reduced from 20 to 5 7 per cent.

In our study, 80 per cent died during the first twenty-four hours, 34 per cent died in the second twenty-four hours, and 16 per cent died after forty-eight hours. The period after forty-eight hours included all infants dying at any time from the forty-eighth hour to nineteen days. Infants surviving the first twenty-four hours have a fairly good chance to live. Most studies agree that over half of the deaths occur in the first twenty-four hours.

Causes of Death of Prematures

The causes of death of the prematures in this series were studied to determine their relative importance. Listed in the order of frequency they are as follows: prematurity, 61 cases, infection, 8, cerebral hemorrhage, 6, congenital malformation, 4, congenital atelectasis, 2, congenital heart, 2, breech presentation, 2, shock and exposure, 1, atrophy of thymus, 1.

Eighteen autopsies (20.8 per cent) were performed in this series of cases. Prematurity headed the list with 61 cases and 6 were confirmed by necropsy examination. Eight cases of infection included diarrhea, respiratory infection, and bronchopneumonia. Three of these cases came to autopsy and proved the diagnosis. Cerebral hemorrhage accounted for 6 deaths and 4 postmortems were obtained to verify the diagnosis. We had 4 cases of congenital malformation which included club foot, encephalocele, spina bifida, and anencephalic monster. Unfortunately, no autopsies were secured but the malformations were obvious. Two cases of congenital atelectasis were verified by autopsy. Congenital heart was found in 2 cases and these were proved by autopsy. Two deaths were attributed to breech deliveries, and 1 case of atrophy of thymus was confirmed at necropsy.

Causes Leading to Premature Births

The records of each mother were studied with the purpose of determining what causes led to the premature births. The following list presents these causes in order of frequency: no cause reported, 88 cases, toxemia, 26, premature rupture of membranes, 18, multiple births, 16, premature separation of placenta, 9, accidental trauma, 7, placenta praevia, 6, infection, 5, hydramnios, 5, pelvic deformities, 3, heart disease, 2, cancer of breast, 1, tuberculosis, 1, induced abortion, 1, syphilis, 1, induction for deformity, 1, anemia, 1, shock, 1, operative interference, 1.

Some of the cases of premature separation of membranes were accidental and some were intentional. Our group of

multiple births included 15 sets of twins and 1 set of triplets. There were 5 cases of infection which included pneumonia, grippe, pyelitis, and upper respiratory infection. Three cases of pelvic deformity included contracted type, justo minor, and flat pelvis. The cases of accidental trauma were due to auto accidents, work, and overactivity in general.

General Care

In group "A" we had 16 breast-fed babies and 57 bottle-fed infants. Bottle-milk formulas included all kinds of dry milks, cow's milk formulas, lactic acid milk, and evaporated milk.

In group "B" 56 babies were started on breast milk and 6 were on bottle formulas. These 52 babies received breast milk until the danger period was passed, some were then placed on formulas, either cow's milk or powdered milk. We made an extra effort to encourage mothers to stimulate breast milk by explaining to them the importance of this type of food for these small infants. Our efforts were not in vain. Babies who received breast milk seemed to thrive better, and their stay in the hospital was much shorter. Grulle, Sanford, and Herron⁹ found that the general infant mortality was ten times greater in artificially fed babies than in breast-fed babies. They found that breast-fed babies possessed greater immunity to infection and disease. Hess¹ and many other authorities agree that breast milk is the choice feeding for prematures.

The majority of the babies in group "B" received three intramuscular injections of blood for general stimulation and to prevent sudden loss of birth weight. Weak solutions of tea were given between feedings. When necessary, oxygen was used to combat cyanosis. Stimulants, such as aromatic inhalations, lobeline, coramine, adrenalin, and caffeine were also used during cyanotic attacks and for general body stimulation.

Before the babies were discharged, they were started on an iron tonic, orange juice, and cod liver oil.

The average length of stay in the hos-

pital for infants in the entire series was thirty and four-tenths days. In 1934, the average stay was twenty-eight days, in 1935, twenty-six days, in 1936, thirty-one days, in 1937, thirty-four days, in 1938, thirty-three days. The shortest period of hospitalization was twelve days and the longest, eighty-eight days. Dunham⁷ reports an average stay of forty-three days and Wilcox,² twenty and one-half days. Our prematures were discharged when the attending physician in charge felt that they were out of danger, gaining properly, and could be cared for by the mother at home.

After leaving the hospital, the mothers on the service are encouraged to return with their babies for regular check-ups at the Brady Well Baby Clinic where the babies are followed until the age of 2.

Summary

1 This study over a period of five years includes 204 premature infants weighing 2,500 Gm or less.

2 Of all babies born in Albany 48.1 per cent are delivered at the Brady Maternity Hospital. The incidence of prematurity at this hospital is 3.47 per cent.

3 A newly equipped premature room was established in 1938 for private and service cases at the Brady Hospital as an aid in lowering our mortality rate.

4 The mortality rate has been decreasing yearly from 1934 through 1938, with the lowest rate of 24.1 per cent in 1938.

5 Prematurity presented the greatest cause of deaths of these infants. Infection, cerebral hemorrhage, and congenital malformation followed in their respective order.

6 Many conditions were found to lead to premature births. No cause reported heads the list with 88 cases.

7 In the year 1938 we had 52 breast fed babies as compared to 16 during the four previous years. This aided considerably in improving our survival rate.

8 The average length of stay in the hospital was thirty and four-tenths days.

9 From the study of these cases, we feel that a special room equipped for the care of the premature is a step forward in lowering the infant mortality rate.

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NEW YORK CITY HEALTH DEPARTMENT'S LABORATORIES

The Bureau of Laboratories offers routine diagnostic services to physicians, manufactures biological products, offers bedside consultation and laboratory services in infections of the central nervous system and in pneumonia, and conducts research.

Contact with physicians is maintained through more than 400 drug stores that are designated as stations of the Health Department. These stations carry a stock of the Department's biological products, supply physicians with outfits for the collection of specimens, and receive specimens for transmission to the diagnostic laboratory.

Collections of specimens left for diagnosis are made daily at specified times from certain of these drug stores, designated as "collecting stations." Other stores specified as "sub" stations are required to forward specimens to the nearest collecting stations. The time of collection can be learned in each station. Information concerning the location of Department

stations may be obtained by telephoning the Diagnostic Laboratory, WOrth 2-6900—Extension 255.

Routine diagnostic service is given in this manner for the following types of examinations:

Serologic tests for syphilis

Sputum examinations for tuberculosis

Smear examinations for gonococci

Cultures for diphtheria

Agglutination tests for typhoid, paratyphoid, typhus fever (Weil-Felix), undulant fever, and tularemia

Excepting positive cultures for diphtheria, reports are sent by mail and will usually reach the physician within four days (5 days for Wassermann's) following the data on which the specimen is left in the collecting box of a station. The reports on positive diphtheria cultures are telephoned to the physician on the morning following the collection of the specimen from the drugstore station, and confirmation is sent by mail.

Case Reports

THE VALUE OF DEXTROSE IN BRONCHIAL ASTHMA IN CHILDREN

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IN THE fall of 1934 my attention was directed to the report of several English physicians in which they described the use of sugar in the treatment of hay fever. These workers, Barber and Ariel¹ and later Osman,² were much encouraged with their results. At about the same time, Malone,³ an American investigating the role of hypoglycemia in allergy, found the blood sugar values in 15 cases of bronchial asthma to be between 68 and 80 mg per hundred cubic centimeters of whole blood. Black⁴ has reported that in 12 patients suffering from allergy the fasting blood sugar varied from 61 to 80 mg.

In January, 1935 hypoglycemia as a causative factor in bronchial asthma was brought forcibly before me. At that time a boy, 2 years of age, responded so well to sugar therapy that further studies and experience were sought. While the series of cases is limited, the evidence points to the great benefit to be derived by using this therapy on bronchial asthma, especially in children. This series is presented herewith.

Case Reports

Case 1—J B, boy, aged 2, had a history of eczema appearing six weeks after birth, this was followed by frequent attacks of asthma at 3 months of age. Skin tests made later showed sensitivity to many substances. He was so sensitive to eggs that the smallest quantity would result in a severe attack of asthma within two to three minutes.

A striking point in his history was his inability to perform any strenuous exercise without suffering from asthma. Ordinary games with young children became the cause of choking torture within a short time.

In January, 1935, at the age of 2 years, this patient was given one teaspoonful of dextrose four times a day. At the end of the ten-day period, this child was coaxed to eat a bit of egg. After a fifteen-minute wait with a syringe filled with adrenalin lying in readiness, there was no reaction. The patient ate a bit more and finally consumed the entire egg in a period of one hour. There was no reaction of any kind. Continuing on the daily dose of dextrose, he was free of asthma for months, although he ran about and played with the other children for hours at a time. In addition, milk no longer caused eczema and ice cream was eaten without ill effect.

In the four years that have followed, this boy has been purposely deprived of his dextrose several times each year. In each instance asthma has resulted within a few days and has been promptly relieved by ingestion of dextrose. Frequently, some unusual exertion would bring on an attack, the patient would then help him-

self to some dextrose and the attack would promptly terminate. Occasionally when he awakens during the night with an attack, he is given his powder and is soon off to a quiet sleep again.

As he has grown taller and older, it has been necessary to increase the daily dose to provide for greater requirements (about 8 teaspoonfuls daily).

His fasting blood sugar in asthmatic attack was 60 mg, relieved by 2 teaspoonfuls of dextrose.

Case 2—W S, boy, aged 18, had suffered asthma since the age of 6. Skin tests at several clinics revealed sensitivity to a large number of allergens. When placed on a daily intake of 5 teaspoonfuls of dextrose, he showed remarkable improvement with marked diminution in frequency and severity of the attacks. Finally the attacks came on only when he played basketball, showing the influence of strenuous exercise in using up blood sugar. These attacks were prevented entirely by having the patient take 2 tablespoonfuls of dextrose before the game and again at the end of the first half.

Case 3—V P, boy, aged 8, had suffered from asthma since the age of 4. The child was sensitive to exercise and to many kinds of food. He could not run a distance of fifty feet without suffering from asthma. A daily dose of 6 teaspoonfuls of dextrose keeps him free of asthma and enables him to compete with his classmates in all forms of exercise. There is now no sensitivity to foods of any kind. These results are transient, however, and withdrawal of the daily dose of dextrose results in asthma within two to three days. Once, because of carelessness, he was deprived of the usual dose, receiving only 1 teaspoonful daily for two days. At the end of the second day he suffered a severe attack, and in my presence he took 1 teaspoonful of dextrose in water. Within five minutes the attack had disappeared as dramatically as though he had been given adrenalin. Fasting blood sugar was 82 mg.

Case 4—T D, boy, aged 5, had asthma since the age of 2. There was no specific food sensitivity. It was noticed that continued activity soon brought on an attack. A blood sugar specimen taken during an attack of asthma showed 54 mg. This patient receives a daily dose of 8 teaspoonfuls of dextrose and is kept fairly free of asthma. Occasionally he awakens with a slight wheeze at about 2:00 A.M. but a teaspoonful of dextrose in water or milk relieves him in about five minutes. As with the others, his appetite has greatly improved, there has been a noticeable gain in weight, and his activity is unrestricted.

Case 5—H S, boy, aged 9, had been a sufferer from asthma for four years. While many skin tests had been done, there were no sensitivities. It was noticed that a period of stormy

weather inevitably resulted in an attack. A fasting blood sugar specimen showed 90 mg, a low normal figure for children. He is now on a daily dose of 6 teaspoonfuls of dextrose whenever the barometer falls, and he is free from attacks. A test of several stormy days without dextrose at once brought on an attack that was promptly relieved by this medication.

Case 6—N H, man, aged 42, reported that eating an apple, pear, or peach resulted in a choking sensation in the throat, so severe as to make him fear for his life. He was given dextrose—1 teaspoonful four times a day for ten days. He then ate an entire apple without symptoms of any kind, a new experience over the previous eight years. Thinking that he was cured, he ceased taking the dextrose. The following day he ate an apple and a pear, once more without symptoms. Twenty-four hours later, after neglecting the dextrose for two days, he started on an apple but was soon in an agonizing attack with the choking sensation in his throat. Unfortunately, the patient was so frightened by the return of his symptoms that he could not be induced to repeat the experiment.

Discussion

What is the mechanism involved? For many years adrenalin has been a specific in relieving asthmatic attacks. One of the actions of adrenalin is to liberate glycogen from the liver into the blood stream. Might not this action of adrenalin be as potent a source of relief to the sufferer as is its muscle-relaxing action? The author has many times witnessed complete relief within five minutes after ingestion of dextrose.

What is the cause of hypoglycemia in these patients? Aside from the theories regarding hyperinsulinism and other glandular malfunction, it is my opinion that poor sugar digestion

is the true cause. My reason for this opinion is the fact that dextrose—and dextrose alone—will relieve my patients of asthma, other sugar is ineffectual. Over a period of four years these patients have been deprived of dextrose many times. Other sugars have been substituted, but apparently insufficient glucose has appeared in the blood stream, for after periods varying from two to four days, asthma recurs. These attacks yield promptly to dextrose within five minutes, showing the quick absorption of the exact element needed.

Summary

Five cases of bronchial asthma in children and 1 case of food allergy in an adult have been presented. In the asthma cases the fasting blood sugar was found to be 54, 60, 82, and 90 mg per hundred cubic centimeters. The normal blood sugar values in children is said to be from 90 to 120 mg per hundred cubic centimeters of blood. The treatment of these cases with dextrose is discussed.

Conclusions

The value of dextrose in the treatment of bronchial asthma in children has been great. Every one of the cases has responded dramatically to this simple and inexpensive form of treatment. Further studies should be made along these lines and on a larger scale.

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CASE OF CEREBRAL PSEUDO-ABSCESS OF OTOGENIC ORIGIN

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CASES of "pseudo-abscess" of the brain of otogenic origin have been described by Oppenheim,⁴ Adson,¹ Bornes,³ Symonds,⁵ Atkinson,² and others. Owing to some unusual features the following case was deemed worthy of report.

Case Report

S F, a 40-year-old operator, was first admitted to the Otolological Service of Beth Israel Hospital on September 1, 1936, with the complaint of pain in the right temporal region of four months' duration. Following an attack of acute coryza in May, 1936, he developed pain

in the right ear but there was no discharge, only buzzing. About a week prior to admission he had another attack of infection of the upper part of the respiratory tract. At this time he noted twitching of the right eye and transitory diplopia. There was again some tinnitus in the right ear but no vertigo.

Neurologic examination showed slight diminution of hearing on the right and blurring of the optic disks (due to myopia). There were no focalizing signs. The visual fields were normal. The otolaryngologist found a nonsuppurative otitis media on the right. White blood cell count was normal.

X-ray examination of the skull revealed evidence of a chronic sclerosing mastoiditis on the right (see Fig 1).

He was discharged nine days after admission with a diagnosis of subsiding nonsuppurative otitis media.

Case presented at the meeting of the Section of Neurology and Psychiatry of the New York Academy of Medicine, April 11, 1939.



FIG 1 Normal pneumatized mastoid on the left, sclerosed mastoid on the right

He was readmitted October 3, 1936, to the Neurological Service. Since his discharge from the hospital, the right-sided temporal pain and buzzing in the right ear had persisted. Two weeks prior to admission he noted drooping of the right eyelid.

Neurologic examination now showed ptosis of the right upper lid, dilatation of the right pupil with fixation of this pupil to both light and accommodation. The consensual reflex was present from right to left but not from left to right. All movements of the right eye were impaired except external rotation. The right disk showed more hazy margins and rather full veins. The patient presented, in addition, a left lower facial weakness, diminished hearing in the right ear, exhaustible abdominal reflexes, and hyperactivity of the deep reflexes on the left.

Lumbar puncture revealed clear fluid containing 42 cells per cubic millimeter (88 per cent lymphocytes), total protein was 63 mg per hundred cubic centimeters. Later spinal puncture yielded clear fluid which contained 8 cells per cubic millimeter and total protein of 52 mg. The Wassermann test was negative and the colloidal gold curve was suggestively meningitic.

General medical examination, including x-ray examination of the chest, was negative. There was no fever, the pulse rate was normal, and there was no stupor. There was no mastoid tenderness, although the tympanic membrane was thickened, the light reflex gone, and the landmarks obliterated. Audiometer tests showed about 20 per cent loss of hearing on the right. Encephalography was then carried out. The graph revealed a slight shift of the ventricular system to the left, failure of filling of the temporal horn of the right ventricle, and some dilatation of the left ventricle anteriorly (see Fig 2).

It was our impression that we were dealing with an expanding lesion in the right middle fossa, probably located on the mesial aspect of the right temporal lobe and making pressure on the crus in this region.

In view of the relative inaccessibility of this lesion and the absence of papilledema, it was considered advisable to postpone operation and to follow the patient in the outpatient department.

After the patient was discharged from the hospital in November, 1936, the ptosis disappeared, but the buzzing in the right ear and the right temporal headache persisted. Late in January, 1937, the patient developed papilledema and was readmitted to the hospital on February 2, 1937.



FIG 2 Encephalogram revealing slight shift of ventricular system to the left. Dilatation of the left lateral ventricle and deficient filling of the right lateral ventricle.

Neurologic examination revealed a partial third nerve lesion on the right, bilateral papilledema more pronounced on the right, slight left facial weakness, mild hyperreflexia on the left, diminution of the left abdominals, but no Babinski sign. There were no disturbances in sensation. There was also no history of uncinate phenomena. There was some general constriction of the visual fields (probably due to myopia) but no quadratic or hemianoptic field defects. Caloric tests showed no deviation from the normal.

Lumbar puncture revealed clear fluid containing 13 cells per cubic millimeter, and the gold curve again was meningitic. Initial pressure was 150 mm., Ayala's quotient, 5.

On February 6, 1937, exploratory craniotomy was carried out through a right temporal osteoplastic flap. The dura was not tense. The temporal lobe appeared adherent along the base of the middle fossa. The dura was covered by a thin membrane. The temporal convolutions were flattened and widened. Incision into the middle temporal convolution revealed soft discolored tissue, this was evacuated. The operator was uncertain whether the lesion was a primary neoplasm with degenerative changes or an inflammatory focus. The postoperative course was uneventful. There was only a mild febrile reaction. The neurologic signs began to recede. On February 11 it was noted that the pupils were equal in size and reacted well, the disk changes subsided, there was slight weakness



FIG 3 Inflammatory and glial reaction and proliferation and congestion of blood vessels

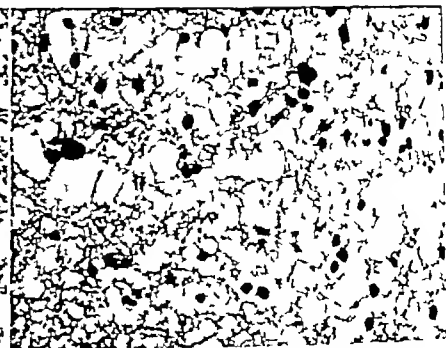


FIG 4 Area of "gemästete" glia cells

of internal gaze on the right, the abdominals were equal, and the slight hyperreflexia on the left also receded.

Lumbar puncture, prior to his discharge on February 25, revealed clear fluid, pressure 136 mm, 9 cells, normal colloidal gold curve.

The neuropathologist reported that the specimen of tissue removed revealed the signs of chronic inflammation. There was mononuclear infiltration of the vessel walls and of the adventitia. The cells in the capillary walls were also swollen, and the adjacent tissue contained mononuclear elements. No leukocytes were found. There was no evidence of tumor (see Figs 3 and 4).

Cultures of the spinal fluid and the material obtained at operation were unfortunately not carried out.

The patient was re-examined on March 26, 1939. He felt well and had been working continuously for eighteen months.

Neural status revealed no abnormalities aside from some weakness of the right superior rectus.

He presented a right-sided middle-ear lesion with lateralization of the Weber to the right, and, although he still experienced buzzing in this ear, he had "gotten used to it."

Comment

This case is being reported for the following reasons: (1) to add a case of pseudo-abscess of the brain to those already reported in the literature, (2) to note the fact that a relatively benign process in the right ear with a sclerosing mastoiditis led to secondary infection of the brain, (3) to emphasize the fact that implication of the homolateral third nerve may be helpful in the diagnosis of lesions of the temporal lobe.

In most of the cases reported in the literature the lesion was in the temporal lobe. Oppenheim thought that this coincidence was fortuitous. Most observers including myself believe, however, that the two conditions are etiologically related and that the cerebral lesion is the result of the antecedent otitis. Of the 3 nontemporal cases reported in the literature, 1

was in the cerebellum (secondary to otitis) and 2 in the frontal lobe (secondary to sinusitis). It is worthy of note that the spinal cell count in our case was relatively low, although throughout the period of indolent activity of the lesion a meningitic curve was found.

It is quite likely that cerebral pseudo-abscess develops on the basis of infection with an attenuated virus, which gives rise in the brain to the signs of a chronic low-grade inflammatory process. Although many of these cases heal spontaneously, the advent of papilledema in our own case made operative interference a surgical necessity. The pathway of infection in these cases is probably by way of the tegmen tympani and the venous channels on the surface of the brain. The localized adhesions found at the base at the time of operation would seem to corroborate this view of the march of events.

Finally, I would suggest that the term "pseudo-abscess" be replaced by the more appropriate one, namely, localized nonsuppurative encephalitis (Atkinson).

I want to express my indebtedness to Dr Charles Davison, neuropathologist at Montefiore Hospital and consulting neuropathologist at Beth Israel Hospital, for the pathologic studies in this case.

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SULFAPYRIDINE IN PNEUMOCOCCUS TYPE XIX OPHTHALMIA

JOSEPH MILLETT, M D, Hempstead, New York

THE use of sulfanilamide for gonorrheal infections of the conjunctiva in infants^{1,2} and adults⁴ has been the subject of a number of preliminary reports. In the majority of these cases amelioration of symptoms and change in the clinical course of the infection can be measured in hours rather than days or weeks as previously. In this highly infectious disease with its pitiful complications and the possibility of spread to the other eye, its rapid control by means of chemotherapy can be considered a marked advance in the treatment of gonorrheal ophthalmia.

The introduction of sulfapyridine for the treatment of pneumococcal infections suggests its use against these organisms in parts of the body other than the respiratory tract. Reports of its successful application in the treatment of pneumococcal infections of the meninges have already appeared in the literature.^{5,6,7} At this time of writing no reference has been found in the literature regarding the use of sulfapyridine in pneumococcus conjunctivitis. The following case report may, therefore, be of interest.

Case Report

The patient, a 5-month-old infant, was first seen on February 5, 1939. The mother stated that the child had had a "running eye" since birth. The amount of pus was so great that it was necessary to wash the eye five to six times a day, otherwise the lids became so matted together that a moderate degree of force had to be employed to pry them apart. In the morning fifteen to twenty minutes had to be spent softening the crust on the lids before attempting to open the eye. The past history was non-contributory and communication with the hospital where the patient was born revealed that the baby had been discharged with clear eyes.

Physical examination revealed a healthy 5-month-old male infant normal in every respect except for a discharging right eye. The left eye was unaffected. A direct smear was made, and a smear was also sent to the state laboratory. Direct examination of the eye after preliminary lavage with boric acid revealed slightly reddened lids. Under the ophthalmoscope the cornea and the anterior chamber were found to be clear. Boric-acid eye washes followed by 15 per cent mild silver proteinate and 1/4 per cent zinc sulfate were ordered. On February 6, 1939, the following telegram was received from the Branch Laboratory of the State Department of Health:

Eye specimen patient K. F. Gonococci not found. Many gram positive cocci resembling in morphology pneumococci and many pus cells found.

The patient was not seen again until March 17, 1939. The eye was unimproved in spite of faithful care as advised. A sterile swab was im-

pregnated with pus and taken to the local pneumococcus typing station (Meadowbrook Hospital). After cultures were made the report the next day revealed type XIX pneumococci and a few staphylococci. On the afternoon of March 21, 1939, the patient was given 1/2 tablet of sulfapyridine (0.25 Gm.) ground up in a little applesauce, and this was ordered to be repeated every three hours. Two doses were given through the night. Local medication was discontinued except when it was necessary to wipe away the excess pus.

Within eighteen hours the character and amount of the discharge had been so changed that the following morning only a slight ooze was noted at the inner canthus of the eye. Medication was continued until 11 tablets (5 1/2 Gm.) had been consumed. The patient was seen daily, and only a slight crusting was noted at the inner canthus every morning, which was only slightly more marked than that seen in the other unaffected eye. On April 2, 1939, a culture taken of the crusting of the affected eye revealed only staphylococci. The reddening of the lids had entirely disappeared, and the eye was normal except for a dacryocystitis, evidenced by the fact that the tears of the right eye kept falling over the cheek. Dilatation of the nasolacrimal duct was advised, but it was not done. A blood count and urine taken after five days of medication were found to be normal.

On April 30, 1939, the patient was seen again because of the reappearance of the discharge in the right eye. It was not enough to cause the lids to stick together. A culture was taken which revealed a few type XIX pneumococci and many pneumococci that showed no capsule swelling in all six pools. Medication was instituted as before, and the discharge cleared rapidly in two days. The dacryocystitis was still present. In about one month the discharge, mild and watery in character, recurred and toward the middle of June, 1939, the duct was dilated, drainage was established, and the eye cleared up entirely. It had remained entirely clear after three and one-half months at the time of this writing. It is interesting to record that on July 7, 1939, the baby suddenly came down with a rather severe type VI bronchopneumonia and recovered. The eye was normal when last seen on August 5, 1940.

Comment

One has only to review the standard texts on ophthalmology to note the entirely unsatisfactory status of the treatment of pneumococcus conjunctivitis. Optochin and quinine locally and systemically have been in the main discarded. The status of serum in the specific treatment of conjunctivitis has not proved itself to be of much value. At present, treatment consists mostly of lavages of antiseptics followed by astringents. By and large, treatment has to be carried out over a long period of time, and



FIG 3 Inflammatory and glial reaction and proliferation and congestion of blood vessels

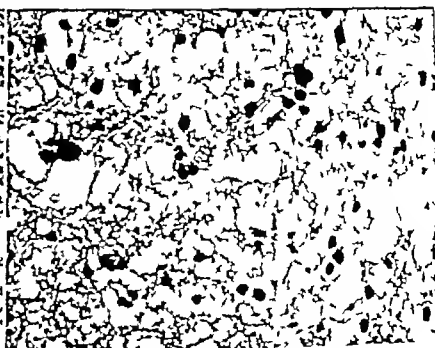


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portion of the phalanx with, however, no definite evidence of break through the cortex. There is moderate soft tissue swelling of the proximal portion of the same finger. The conclusion was cortical periosteal reaction of proximal phalanx of the left ring finger, with small area of rarefaction at the distal end. There was moderate soft-tissue swelling.

Since the x-ray revealed no marked pathologic changes, the possibility of an infected foreign body prompted exploration. The patient was taken to the operating room and the local area anesthetized with 2 per cent novocain (the patient was a very cooperative child and this anesthesia was felt adequate), the infected area, about 3 mm in diameter with pus discharging from the center, was incised and necrotic tissue was found at its base. The latter was curetted and the foreign body substance came into view. This was grasped with a small Kelly clamp and a splinter of wood about 1 inch in length was removed. The cavity was iodized and packed with one strip of iodoform gauze and one silk suture was taken to approximate the skin edges. This patient was followed in our dispensary for a period of three weeks, at the end of which time the wound was found to be clean with no evidence of discharge of any nature. The swelling had diminished almost entirely, the motion of the finger was good, and practically no pathologic changes existed at the end of this time.

Conclusion

Interestingly enough, the history and physical findings in this case were related to a number of



FIG 1 Foreign body, belated diagnosis

doctors of my acquaintance, and in only one instance was the diagnosis of foreign body considered first in line with reference to the differential diagnosis. I, also, had not considered foreign body first and foremost in this case. Other possibilities also given consideration were osteomyelitis, sarcoma, tuberculosis, and tenosynovitis. This case, although of minor surgical consideration, is most instructive. No matter what the pathologic considerations might be at the time, with a chronic discharging sinus, be it in the head, neck, chest, abdominal wall, or extremities, one must emphatically bear in mind the possibility of an infected foreign body. The enclosed photograph shows the splinter and pathology approximately four days after removal.

30 East 40th Street

THE PROPHYLACTIC USE OF SULFONATED OIL IN CEMENT DERMATITIS

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OF THE ten leading causes of occupational dermatoses, alkalis, including cement and concrete, rank second in incidence (10 per cent) in a study by Schwartz¹ of 9,116 cases reported to the United States Public Health Service. This large incidence, of course includes cases in many fields, from bricklayers to farmers and fruit growers, where the trees are lime sprayed. It is evident, too, that there are many cases that do not reach the stage of disability that requires reporting or medical care.

In the treatment of occupational dermatoses, it has been my aim to make the patient's return to work possible. Experiments in nonspecific desensitization to allergens have thus far been inconclusive, but I believe that in this instance of cement dermatitis some progress has been made—that is, the use of sulfonated oil instead of soap, making it possible for two bricklayers with this condition to return to work with no recurrence.

Cement dermatitis is not, in the majority of instances, an allergic phenomenon.² It is, rather, a traumatic process consisting of (1) the caustic action of the calcium (2) to a lesser extent, the traumatic action of the grains of silicate,³ and (3) the rise in temperature induced by the hydration of lime. These facts account for the number of cases showing negative patch tests, as in the cases below and as reported by Goodman and Sulzberger⁴ and Rothman.⁵ Of course there are also secondary factors in the etiology, dryness of the skin, age, weather, all play some part.

The use of sulfonated oil as a detergent in these cases was prompted by the thorough discussion of the action of soap on skin by Blank.⁶ In patch testing a series of subjects with various fatty acids, he found the saturated fatty acids of low molecular weight, caproic, caprylic, and lauric acids, give a high percentage of positive patch tests on normal subjects. The mixed

the disease runs an indolent course, although some cases of pneumococcus conjunctivitis have been said to clear up by "crisis"

The above reported case is interesting from a number of points of view. One of the most important is that a pneumococcus ophthalmia of several months' standing had immediately (measured in hours) been chemotherapeutically affected shortly after the institution of sulfapyridine. It demonstrates again, as has been pointed out by Telling and Oliver⁸ and Lawrence⁹ in several cases of pneumococcic pneumonia, that the drug exerts a deleterious effect on type specificity. In addition, it reveals that wherever surgical drainage is indicated it must be employed before the infection can be entirely eradicated by chemotherapy. This has been noted and advised in the chemotherapeutic treatment of streptococcus meningitis of otic origin, urinary stasis due to various forms of obstruction, and other surgical infections. While it has been noted that pneumococci have occasionally become resistant to sulfapyridine therapy^{10,11} during a course of treatment, in this case the organisms responded to a second course of the drug after a lapse of about four weeks between courses.

Conclusions

A case of Pneumococcus type XIX ophthalmia of about four and one-half months' duration in a 5-month-old infant responded almost immediately to sulfapyridine therapy. Complete cure could not be obtained until the focus was eradicated from the nasolachrymal duct and drainage established. The proved effect of sulfapyridine on pneumococcic organisms in general suggests its use on infections with these bacteria wherever they occur in the body.

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FOREIGN BODY, BELATED DIAGNOSIS

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EACH and every one of us in the surgical world at one time or another has been confronted with foreign bodies either in the line of diagnosis or their removal. This article concerns itself mostly with diagnosis. The types of foreign bodies are legion in number, but the pathologic picture of an infected foreign body may be considered as one. No matter what its nature or consistency might be, we all know that a persistently draining sinus is established, lined with granulation tissue, and will continue to discharge until the foreign body is removed.

The patient, 7-year-old girl, was first seen in the dispensary at New York Post-Graduate Medical School and Hospital on February 23, 1940, with a chief complaint of swelling and intermittent drainage in the region of the medial aspect of the proximal phalanx of the left ring finger. History as given by the mother was somewhat as follows: "About six months previously the child was scratched in the proximal phalangeal area of the fourth finger of the left hand while climbing a wooden fence. There was some bleeding but no marked discomfort at the time. A day or so later a 'lump' appeared somewhat like a mosquito bite and remained about this size for a period of about two months. A sub-

sequent injury in this area, four months later, caused the finger to bleed a little, 'proud flesh' appeared at the site in three or four days, a progressive swelling of the proximal phalanx developed, and patient also began to notice a slight purulent discharge." At this time the mother decided to take the patient to a private physician who cauterized the granulation tissue. However, the sinus remained draining scantily and the child was again taken to the same doctor. No x-rays were taken at the time. The family doctor finally referred this patient to the New York Post-Graduate dispensary.

Examination showed a girl apparently in good health except for a slight anemia. In the local area, i.e., the left ring finger, proximal phalanx there was a fusiform swelling slightly red at the midportion, and on the medial aspect there was noted an opening about 2 mm in diameter with a firm cordlike structure extending proximally for about one inch. No marked tenderness was present. The flexion and extension of the finger were not appreciably limited and pressure over this tract caused some pus to escape through the opening previously mentioned.

X-rays were taken for a diagnosis of possible osteomyelitis and foreign body in the finger. The report is as follows: Examination of the left hand shows cortical periosteal thickening along the proximal phalanx of the ring finger. There is a small area of rarefaction near the terminal

After almost one year's observation, sulfonated castor oil was prescribed to be used (three to four times daily) instead of ordinary soaps, the oil to be rinsed off with water. It proved to be a fairly satisfactory detergent and has prevented a recurrence during the past three months, although working at the same job and using the same cement. When he stopped the use of the oil for a few days, his dermatitis reappeared. He is able to work without gloves and claims his hands are in better condition than in the past five years.

Case 2—F. A., man, aged 51, had been a bricklayer for many years. He complained of dry skin for a long time but no eruption until the winter of 1939, when he developed an itchy, scaling, erythematous eruption on the hands, with much fissuring and induration. This condition persisted for four months, until he stopped working, when it slowly cleared up. On two occasions when he tried to return to work, he had exacerbations.

When the sulfonated oil was used, he found the skin was not so dry and, after three weeks of his usual work, has not had a recurrence.

Comment

Of course, 2 cases of successful return to work do not prove that cement dermatitis can in-

variably be cured in this way. There are so many variable factors that one is impelled to be cautious in drawing conclusions. The use of sulfonated oil has been successful not only in cases of cement dermatitis but also in other types of "hand eczema."

Summary

The reasons for the use of sulfonated oil are outlined. Two cases of cement dermatitis that resisted all attempts at permanent cure until sulfonated oil was used instead of soap are presented. These cases will receive further study.

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NISCHIEVOUS MEDICAL FALLACIES PUNCTURED

Dr. Haven Emerson neatly punctured some of the medical fallacies that have been urged upon the nation in an address to Detroit doctors and their wives a few weeks ago, especially the fallacy "that the national health is in a bad way, that the medical care of one-third of the people is neglected or entirely lacking, that a revolution in the conduct of medical affairs is required, with financial and administrative dependence for health and medical care of every state upon Federal authority." He said, in part:

During the past decade the following significant changes have occurred:

Infant mortality has dropped 46 per cent in New York City and 29 per cent in the United States.

Maternal mortality has fallen 50 per cent or more in most parts of the United States.

The tuberculosis death rate has fallen 43 per cent in New York City and 32 per cent in the United States.

The diphtheria death rate has fallen 97 per cent in New York City and 59 per cent in the United States.

The typhoid fever death rate has fallen 70 per cent in New York City and 59 per cent in the United States.

The death rate from diarrhea and enteritis under two years of age has fallen 62 per cent in New York City and 67 per cent in the United States.

The pneumonia death rate has fallen 66 per cent in New York City and 31 per cent in the United States.

The accident death rate has fallen 39 per cent in New York City and 28 per cent in the United States.

The death rate from three causes which in the main are not preventable but are typically related to the steadily rising average age of the population and particularly of the portion over 45 years of age, have increased, for diabetes 36 per cent in New York City and 25 per cent in the United States, for heart diseases 10 per cent in New York City and 22 per cent in the United States, for cancer 18 per cent in New York City and 19 per cent in the United States.

Death rates from many other diseases have fallen, not as a result of specific measures of prevention so much as from a general high level of sanitation and personal hygiene and improved skills in medical and nursing management of sickness.

No comparable experience can be quoted for any other people or nation in human history. There is nothing in this record to give any basis for the fantastic and exaggerated statements of gloom and despair which were foisted upon the public in July, 1938, by the spokesman of the federal government, to prepare the voters and the legislators to welcome a vast program of expenditure in the name of health.

The story of improving national health is too consistent and continuous to justify any serious credence in the much exploited claim that more than a third of the nation lacks adequate medical care and that an even larger fraction is suffering from economic disadvantage on account of illness.

In spite of the inadequate incomes of the families of many wage earners and of the large amount of unemployment, the health of the people of the United States has not been neglected or medical care been denied them.

The U. S. Public Health Service, Washington, D. C., has motion pictures to loan on cancer

pneumonia, and syphilis, the borrower to pay only transportation costs.



FIG 1



FIG 2

fatty acids of coconut oil gave 100 per cent positive tests on normal and soap-irritable subjects. He found, however, that the mixed fatty acids from castor oil give negative reactions in all normal and soap-irritable subjects.

The cutaneous surface, in Blank's opinion, ranges in pH between 4 and 7, aqueous solutions



FIG 3

of commercial soaps range between pH 10 and 11. In other words, the application of soap to the skin means applying a fairly strong alkali to a somewhat acid skin.

It has been shown, therefore, that the irritant action of soap is based on two factors: (1) the type of fatty acids contained and (2) the alkaline reaction of the soap solution. The use of sulfonated castor oil as a detergent has, therefore, a logical basis, since the mixed fatty acids of this oil showed a minimum irritation and showed that the pH is slightly on the acid side.

Case Reports

Case 1—D. H., aged 53, man, had been a bricklayer during all of his adult life. He began to have erythema, fissuring, minute ulcerations and scaling of the hands five years before. This improved in time as he began to use gloves for protection. The eruption became much worse seven months before, involving both hands (Figs 1 and 2), forearms, forehead (Fig 3), and the top of the right ear.

Patch tests with wet cement applied to the back were negative, but when applied near the forehead lesion, they were strongly positive. It was found that the sweatband of the cap was impregnated with cement. The ear lesion was due to cement carried on the pencil that was constantly worn above the ear. On four occasions, rapid improvement followed cessation of his work, but there was no ointment, glove or other method of protection that would allow him to work with no recurrence.

disease where bacterial shrapnel gets in its unholy work, fighting for and collecting only a comparative pittance, without creating professional disharmony, which roars and reverberates like a thunderstorm across the rugged, uneven province of pills and powders

At this point I wish to pause momentarily to champion just a bit the little man with the black bag—that hangover from the 'horse-and-buggy' days—that seemingly decrepit relic of the dark ages of medicine when castor oil and epsom salts knights in archaic fashion went forth equipped with cumbersome armor to joust with disease

In this present period of lofty high-hatted specialism there is a tendency for egotistical nabobs of genius with bulging craniums to utter slurring criticism about this little fellow, this lowly man who they assert, is guilty of selling only "deified guesswork" and "Delphic pronouncements"

To hear some haughty Aesculapian advocates of group medicine, socialized medicine, or other forms of revolutionary medicine talk, a humble listener who didn't know his way around the Hippocratic bone yard would gather that such dignitaries never sign a death certificate and that they always hover near at hand to snatch unfortunate victims of disease from a yawning grave after the old family doctor negligently has allowed them to drift into its close proximity. Depend upon it, if there is any honorarium—financial or otherwise—in sight they usually grab it, while the little fellow gets his pay in repercussions

Credit in this vale of tears and rascality doesn't always go where it is due. The wrong king often is crowned and the scepter adorns an unworthy scalp

I happen to belong to that large but select body of physicians who usually are designated by the pompous big shots as 'general practitioners'. The attitude of the self-annointed intelligentsia of physic turns me up on occasions. I, along with others of my ilk in the pill slinging profession, am assumed to be a know-nothing foggy on my way out of the medical picture. I am believed to be clinging to the ropes of the sickroom arena waiting for a bureaucratic referee to finish the count and ruthlessly toss me from the ring

The swank gentry forget that it was a little man" who discovered vaccination that it was a little man" in Georgia who first ventured to use ether for a surgical operation, that it was a little man" in rural England who introduced digitalis in the treatment of cardiac disease—the drug which plus rest does about all that can be done in such ailments outside of a few minor

secondaries, despite the electrocardiogram, the x-ray, and other scientific apparatus utilized today for studying the heart, or that it was a 'little man,' Ephraim McDowell, who in 1809 in Danville, Kentucky, had the courage to perform the first ovariectomy while irate citizens threatened to lynch him if his experiment failed, an operation that paved the way for modern abdominal surgery, the surgery which—if the confession of this magazine author be true—enabled a doctor to make more money exploiting laceration tools than an honest one ought to make

Perhaps it will be some 'little man,' working in an obscure laboratory hidden in a garret or a cellar, alone and half starved but burning with unquenchable zeal, who yet will pick the locks of the vault in which is secreted the enigma of cancer. Who knows?

There are certain fundamentals governing the practice of medicine that should never be lost sight of but that should be taken into serious consideration by advocates of group practice when advertising their fad in grandiose style.

After all that is said to the contrary, the indisputable fact yet remains—medicine always will be an art as well as a science no matter what radical advances are made in the latter field

It necessarily will be so because there is an art in establishing prompt obedience to directions, in obtaining the wholehearted cooperation of a patient, in imparting and in getting adopted useful health information and instructions, in winning the confidence of frightened children, in understanding comprehensively the discouraging problems of the aged while sympathetically ministering to them, in entering strange homes and quickly achieving a commanding confidence among those present in one's ability to cope successfully with any emergency which has arisen. There is an art in comforting and assuaging the torturing pangs of a grief-torn soul, in being the tactful purveyor of sad, disastrous news to loved ones, in building up courage within those desperate individuals who, unfortunately, are forced by the exigencies of malignant disorders to go down into the depths of the valley of the shadow, their minds overwhelmed with the terrible fear that they never may return, and there is an art in smoothing the painful pathway of others who, without hope, are journeying gloomily, somberly down the dreary road which winds slowly but inevitably to that bourne from which no traveler returns

The high-brow specialist may pass this off with a lofty condescending gesture and disparagingly term it just selling a bedside manner." But it is more helpful to the sick than a jarring clash of personalities. It must be realized that medical

Special Article

WHY NOT GIVE THE DOCTOR A BREAK?

My Answer to Group Medicine

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RECENTLY I read in the *American Magazine** an article that, in subtle fashion, cleverly attacked the tenets of present-day medicine and vigorously urged the early development of group doctoring.

Reading it makes me yearn to cross verbal swords with its author and ram a sizzling blade through his left ventricle. To present lavishly only one side of an important subject, vital to a more or less uninformed, easily misguided public, is unquestionably unfair as well as harmfully misleading. The old puritan town meetings down East always gave the opposition a chance to elaborate its views. That is what I ask for—an opportunity to let the public see the other side of the shield.

Perhaps I am a puny medical Jack the Giant Killer attempting to climb a tottering bean stalk—a vaunting, audacious David striding forth to do battle in the arena of argument with a powerful Goliath, M D.

But if I were convalescing from pneumonia with my blood pumped full of curative rabbit serum, I would have sufficient spunk left in my system so that no one could heave a pitcher of literary ice water in my face and scare me into the delusion that I had just broken out with a cold sweat from fright—even if the author who hurls it hails from a prominent Boston family and has a national reputation for big achievements with a scalpel.

This particular writer-exponent of group medicine starts off by submitting the naïve confession that he found he was making from his surgical work "considerable more money than an honest man ought to."

As an excuse for his pirating adventures into the pecuniary realm of big fees he gave—in a remarkable example of fiction composition—that old alibi that had its origin in the halcyon Garden of Eden time—he laid the blame for his sin on a woman.

He discovered that, without his knowledge, his grinningly capable secretary had skyrocketed his income amazingly!

It is a well-established fact that an office girl

occasionally has created havoc within her perfumed zone of activity, but few ever have been intrigued into such a heinous pastime as this particular doll.

This gal would gaze with malice aforethought through the plate glass that gave view to the street and charge for the boss's services a price based on the value of the car a patient arrived in! "I think that the cost of an operation is worth the price of an auto, don't you?" she coyly gurgled to her employer.

Therefore, if doc pricked a fester—a Ford, if he lanced a carbuncle—a Cadillac! A swell dame who clicked. I wish I could hire one like her.

His frank admission exemplifies the fact that fees have grown extravagant among many strategic surgeons and other specialists until there has developed an aristocracy within the professional domain. Some men have become wealthy through their practice, while many of the rank and file have plodded on just a few jumps ahead of the poorhouse. Somewhere around 80 per cent of the doctors do a million dollars worth of work for comparatively nothing, while the other 10 per cent recoup for themselves half a million in cash. The situation is analogous to two miners in a partially exhausted El Dorado pecking away for gold. One gets all the nuggets and the other gets only the dust. This makes things sadly out of balance.

Perhaps there is no definite proof that would hold water before a judge and jury that such assertions are true, but, like the harpin in a bachelor's bed, the evidence to date is suggestively suspicious to say the least. Everyone knows many things are true that can't be legally verified. It would be difficult to establish in a dingy court room the claim that there is a deity known as the Holy Ghost, yet there are millions of intelligent people who devoutly believe in such a supernatural being.

Now, there can't be a few hundred doctors on one side of the medical picture who have made their pile by being entrenched in strategic strong holds from which enormous fees are ruthlessly shot as though from a gun and several thousand others scattered out on the lonely battlefields of

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lavish fashion. They are the type who, when they hole up in a hotel, must have the imperial suite, even though accommodations as good are obtainable just around a corner of the thickly carpeted hall. If a salesman knocks on the door of their humble cottage and offers a twenty-dollar gold piece for a song, they are not satisfied until they find another twenty-four carat coin for which to warble a couple of grand opera arias.

I have children of my own, but they were not delivered by a thousand-dollar accoucheur, although the one who acted in this capacity was exactly as competent as those who have the nerve to demand an exorbitant fee.

With the excellent record midwives have established in countries like Italy and Denmark, it is not flattering to a carefully trained medic in the United States to have the inference published that he is not capable of attending a confinement case safely and sanely.

There are estimated to be a great many physicians in this country. I don't know the exact number, but as Mark Twain says, "It's near enough." Probably three-quarters of them detest baby cases on account of their emergency nature, the long hours of harrowing attendance they entail, and the exhaustive responsibility they require. But be assured, any one of them is eminently qualified to render efficient service if called upon to assist the stork.

The Joneses or anybody else can get competent and reliable obstetricians everywhere, unless in a desert or an isolated hangout, for fifty dollars or less a birth. Probably there are hundreds of infants arriving daily whose ticket on the uterine express doesn't cost half that sum. If people wish to hire a Zeppelin to fetch a baby when an ordinary plane would fly it safely in, it is O.K. with me. But advertising that the cost of a youngster nowadays is a prohibitive proposition or that the event needs a corps of group specialists to inspect the bedroom scenery is a lot of tommyrot which needlessly discourages motherhood.

If one seriously analyzes the accusations that group medicine exponents bring to bear upon honest, hard-working, well-educated physicians and their fee system of payment, which has prevailed almost universally since the days of Hippocrates, one is unimpressed with their utter fallacy.

For example, the assertion is made in print by one of their able spokesmen that "75 per cent of our population is missing out on cures," which modern medicine has made possible and that exorbitant fees of "\$500 to \$10,000" for some abdominal operations are being charged.

This is such a subtle unverified amplification of facts that it needs a definite autopsy. It is a

grossly inaccurate declaration intended to cleverly misrepresent the truth. Such an estimation is not based on a trustworthy survey, it is absolutely false. If a statement like that presented to the public isn't hitting brother doctors below the belt, then I never saw a prize fight. No wonder the publication or the promulgation from the rostrum of such bold deliberate exaggeration creates misunderstanding and confusion in the minds of the laity.

In the first place, 75 per cent of the people of the United States are not sick—unless those with a coated tongue or a pimple on their beak are counted in—or there would be an epidemic of illness in our midst rivaling that of medieval times when the black plague was on the rampage.

In the second place, where one fee of \$10,000 is obtained in this country for an artistic job of cutting, 10,000 operations are performed for a hundred bucks or less. A medical man guilty of foisting such brazen buncombe broadcast either ought to be tarred and feathered by his brethren or placed in a psychopathic hospital to have his head examined.

Again, to fan the fire and make it blaze cheerily, it is alleged that there are "unqualified, self-appointed specialists in each city." An alarming word picture is projected on the printed screen describing how a man may be graduated in medicine, practice it for a time, and then become a horse trader in Horseheads, New York, or a bar tender in Bar Harbor, Maine. If he so desires he can become a traveling salesman and attempt selling lawn mowers to the Eskimo or journey to Turkey and vend baby carriages to the eunuchs. After a few years, if business falls off and his wife begins clamoring vigorously enough for new silk lingerie or a fur coat, he can return to medical practice and announce himself a brain surgeon. If he finds a patient whose skull is thick enough, he can go to work at once.

All this is true in a modified sense. As an actual fact it seldom occurs as everyone knows.

So long as lawmakers willfully legalize every 'pract,' 'path,' and 'cult' which quack genius can originate to foist on a susceptible public, they won't stay up nights to draft laws governing qualifications of specialists. No one denies that there isn't an urgent need for such legislation, but the solution is a legal one—not medical. The majority of physicians would welcome reasonable statutory restrictions for they know that there are now—as there have been in the past—too many specialists and too many who are specialists in name only. Of course the medical profession has regulations governing requirements for entering specialism. But it must be borne in mind by the critical that a *law* and a *regulation*

science is an intricate highly complicated piece of mechanism, which has to be oiled by artful methods or it will squeak as discordantly as the rusty hinges on an antiquated mausoleum—especially so if it ever is manipulated by a bunch of obstreperous political bureaucrats

Even if a brilliant disciple of Hippocrates has a cranium packed so amazingly full of high-pressure science that he suffers from constant headaches and is stoop-shouldered from toting around such a magnificent cerebrum, he nevertheless must mix this important art with his heavyweight technic if he wants to put his professional skill across with shining success, or he will be as much of a flop as a wet flag on July fourth and about as inspiring to have around

I am not maintaining that art is everything or trying to detract from science and scientific attainments. No claim is being made that a medical man can succeed on it alone, for no one has a more profound respect for science and its useful application than I have. A doctor, no matter how slick and suave he is, can't fool all his patients all the time. I believe an honest man in medical practice—or in any walk of life, even though he be a despised plugger—in the end always beats a crook. If a doctor discovers he is selling nothing to the ill but sickroom charm, he is not a fit creature to invade group medicine—unless group medicine desires to outfit itself with racketeers

The ubiquitous Jones family often is used as a typical example—a cross-section slice, so to speak, of the great middle class—for illustrating and elaborating the problems of the household that has a \$3,500 income or less

The Joneses are the ones who usually ride up in automobiles to doctors' offices wearing fur coats and more costly raiment than medical doctors can afford for themselves or their families, who purchase, on the installment plan, electric refrigerators, radios, oriental rugs, mahogany furniture, and other lavish luxuries too numerous to inventory, who take vacations and gallivant around the country on pleasure trips, while physicians are forced to stay at home because their bills are unpaid, and who throw lavish parties, patronize unholy cafés, night clubs, and dancing orgies—but who can't manage to come across with cash on the wood when they are sick

Who guzzles all the beer, wines, and liquors that keep the saloons and other drinking joints running? Who attends the prize fights, the wrestling matches, the dance halls, the ball games, the skating carnivals? Who patronizes the movies and keeps them jammed to the doors with gaping addicts? Who smokes the hundred and sixty billion cigarets and consumes the vast

amount of other tobacco each year? Who keeps the candy stores open with people crowding them like hungry flies? Who plays the slot machines and maintains other forms of gambling in a rampant fashion? Who keeps the brothels' red lights burning to make venereal disease for medical men to care for gratis? Well—I'll tell you. A big proportion of them are the Joneses!

The answer to these questions goes a long way in solving the enigma why medicine today doesn't fit the Jones's pocketbook. Perhaps it is true that fees have been too high—especially surgical and specialism fees—that hospitalization has cost too much, and that x-ray and laboratory charges have mounted to lofty heights. But it must be remembered by the critics that the Joneses have expanded lavishly in their demands. They insist, when ill, on special nurses galore and accommodations de luxe. They insist on the elaborate and the extravagant until they are milked so dry a farrow cow's udders would seem a creamery in comparison to what they can squeeze out for a physician when his bill is rendered

Money, money for everything, but no dollars for doctors!

Childbearing is alleged to be a special function of the Joneses, and it must be conceded that many of them devote attention to it with phenomenal vigor and astonishing success. This fact comes in for a big hug by the clinic boys who hover over and buzz about it like a bumble bee absorbing nectar from a clover blossom. It's a subject they love to embrace with as much enthusiasm as a new sweetie. The knowledge that babies have been alighting on this terrestrial sphere for thousands of years, most of them quite successfully by the same competent route which nature so wisely—or unwisely, according to how one views the performance—constructed, never seems to impress them favorably with the process. They always are regarding the arrival of a baby with grave apprehension. They declare in awesome tones, "What childbirth needs is specialism, the Joneses must have the best—to hell with the expense!"

So when young Jones and his wife decide to have an heir—or she becomes pregnant without a decision—they lose sight of the fact that the best obstetrical care is not always the most expensive.

"How much will it cost us?" they inquire of a tony infant snatcher that one of their bridge friends has recommended at the end of a grand slam

"All told \$200—10 per cent of your income." After a deliberative powwow they team up

Now, there are lots of Joneses like this, with a few Smiths and Browns thrown in for good measure, who love to blow their money foolishly in

sickroom dilemmas so terrible that goose pimples as big as the warts on a toad's back arose on my spine. I have inhaled noxious stench mopped up vile filth, been spattered plenty with poisonous blood, witnessed scores cut to pieces in the operating room and sewed together again, and picked up and repaired the mangled victims of horrible accidents. I have listened to agonized groans until my ears have rung like the chimes in a belfry, have helplessly observed the grim pallor of death steel over the silent visage of the doomed in the grief-torn homes of rich and poor, and have spent long wearisome hours in distant nights gone by watching the struggling approach of a slow-winged stork while the cries of on-coming motherhood resounded from cellar to attic with intensity sufficient to nearly raise the roof. I have done this for a fee—sometimes received, sometimes not—I wouldn't do it for a salary if I could help myself. I fear I couldn't put the requisite "oomph" into it.

I am positive I can keep up more steam on less money from fees than I could if I received a bigger amount from a salaried sinecure, and I know I can give my patients more value in service for their money. Perhaps if I were employed by a Mayo clinic, did just one specialized job with assistants galore to do the tedious work, my viewpoint might change. I am convinced that most medics who are worth their salt feel the same way.

When some ignorant one—or one who should know better—pretends that the life of a banker or an industrialist is comparable to that of an active physician, every gray hair on my head indignantly stands erect and shrieks vehemently for vengeance. Such claims are bosh. Their contrasting activities are no more to be compared than a horse chestnut and a chestnut horse.

Group medicine enthusiasts must not forget, either, that a lay person is prone to regard his doctor as a machine—a sort of human taxicab—of which he may demand quick service at any hour to carry him or one of his family through some illness, either fancied or real, so long as he pays the shot. What such an individual desires is excellent service and not phoney excuses. He imperatively wants old doc to hurry to his relief as though someone had caught fire from a sun-burn and Upandatem, M D, was a chemical hose company turning out on a still alarm to subdue the conflagration. If group medicine ever arrives, the Lord have mercy on the impatient soul. What he will get will be reversed—excuses and not much service—and I don't mean maybe.

What I have done and suffered under a fee system is no more, probably not nearly as much, as many hard-working brothers in misery have

stood for. When one gets right down to brass tacks, the incentive to earn more money is the lash that drives medical slaves to work long hours often under most trying circumstances. A fixed salary, with no encouraging prospects of a pleasing raise, doesn't carry the requisite sting, glory, fame, altruism, are merely secondary motives unless one is so enthused by his work that one is all 'good Samaritan' which I "ain't." I have three precious reasons why—a wife and two youngsters.

Should all medicine eventually be distributed on the group principle? is a question asked by one of its ardent supporters.

In answering this query I want to propound a few conundrums myself.

Just how are towns, villages, hamlets, and scattered homes in rural districts to be served with group doctoring? Is the mountain coming to Mahomet?

Just where, outside the bigger cities, are the specialists going to be dug up to form the necessary groups to attend these remote sections? Must their inhabitants depend on flying squadrons who after city office hours, dash into the country for a hurried tour?

Is every bronchial cold, coryza, quinsy, cinder in the eye to be group-doctored? Must every pain in the neck, every pimple on a fair maiden's cheek, every boil on an old maid's gluteus maximus be 'Mayoed' or "Johns Hopkinsed"?

Must every baby shake hands with an oculist, dermatologist, neurologist, orthopedist, and all the other high and mighties as soon as it arrives in the world before it gets its eyes open? If a person wants to get vaccinated, have a blood count, or take a laxative, must he push-button a clinic and be interviewed and pawed over by a mob of experts?

If 3,500 families are supplied by a retinue of fifteen or twenty medical men trained in various specialties, what are such families going to do for prompt service if an epidemic like the influenza of 1918 suddenly invades their midst and half their number and half the docs are stricken? Will they have to depend on chiropractors and osteopaths?

Will the whole tribe of experts duly assemble for a gala occasion when the garrulous wench loaded to the gills with all the symptoms in the book—and a few she has invented on the side—comes to a clinic for a copious mental catharsis about her pet neurosis? Will the entire gang turn out at night to examine a surgical abdomen and remain patiently a couple of hours trying to convince a reluctant victim he must be hospitalized without delay and have an ugly gash cut in his belly?

are as different as a baseball diamond and an engagement solitaire, consequently there may be some evasions. After all a law is a law, while regulations, drafted by an organization such as the American Medical Association, are like pants with no suspenders—they are often upheld with difficulty.

It is ballyhooed, furthermore, in dramatic outbursts of rhetoric, that most people are in an appalling quandary when they have to select a medical adviser.

To dissect this assertion properly, let's revert back to the Joneses for a moment.

Mrs. Jones always finds herself in a dither when she has to single out a doctor. She can decide upon the right college for her boy John, and she can make a fair guess on a son-in-law, or she can grab a second husband. But when it comes to picking out a physician, she always makes a hideous mistake because she has no guide to go by, only haberdashery and hirsute adornments.

Now there are some people who just naturally are endowed with the fatal ability to purchase the wrong hat, go to the wrong movie, or get mixed up with the wrong partner. If a wide-awake bee is humming within a mile of them, they are sure to get stung. They are the type who go out to purchase a mare and come home with a rocking horse. They don't use their heads. Everything is left to fate when they reach into life's grab bag. Is it any wonder they sometimes choose the wrong doctor?

Sickness is always a drab proposition. There are only a limited few who particularly enjoy ill health, who really get a delightful kick out of its experience, or who love to talk incessantly about "their" operation. To most people it is a somber tragedy staged on a turbulent sea of puzzling uncertainties, doubtful misgivings, and panicky fears of both physical and financial shipwreck.

When it descends upon one or invades one's family and seems about to snatch a loved person ruthlessly into the great beyond, no one desires to encounter an unscrupulous doctor who gazes at them with mercenary anticipation as he gleefully rubs his itching palms together, exclaiming to himself, "There am gold in them thar ills!"

Numerous methods exist for acquiring the services of a first-class doctor besides appealing to a janitor or a postman. One excellent way is to phone the superintendent of a good hospital. A three-minute talk would give an intelligent person sufficient reliable information to put him in touch with a dozen skillful, high-class medical men. Yet, I recently read a statement made by a personage high up in my profession who declared people "have no criterion to help them decide

between one doctor and another." What non-sense!

Another asinine claim is advanced that because bankers and industrialists always have been on a salary and have survived with plenty of initiative, therefore it is to be assumed doctors likewise can maintain initiative if paid a definite stipend for services instead of receiving a fee for them. This bald assertion is made without any more substantiation than the one made by the person who originally declared that the "moon is made of green cheese."

I don't believe many physicians working on a salary would take the punishment I have absorbed struggling to make a living under the fee system. I honestly don't believe I could put the same intensive effort into the care of the sick for a definite wage. There would not be the relentless driving force—the prodding stimulus—the ambition urge. There is an unpleasant uncertainty about a doctor's income that forcibly eliminates the tendency to develop a lazy leg. Competition with other aspiring men keeps one stepping briskly forward lest an impatient hard-won clientele drifts away.

These are impelling forces that send a doctor forth—when half ill, often wholly so, or when dog-tired, aching unmercifully for rest and sleep—to act his part like a good trouper so that the show may go on. I have gone on calls when it was agony to start such an expedition, returned home weary, with nervous battery exhausted, limp as a drowsy angleworm, then dragged out again.

For years I have been pestered by unnecessary telephone calls at all hours, often at most inconvenient times, but have struggled to answer them so sweetly that whoever was calling would think they were connected with a beehive bursting with honey. Times innumerable, hungry as a wolf I have just eased my corns comfortably around a table leg and, before the steak had time to juice the platter, was on my way again filling my stomach with swallowed cuss words. I have tolerated suffering and annoyances sufficient to drive a holy saint to a heavenly bughouse in an eager, strenuous effort to maintain my status and increase my business.

There also are intrinsic factors in a doctor's life that make it peculiar to itself—that distinctively set it apart from all other laborious pursuits—that consume nervous reserves wholesale. I have turned out hurriedly in howling blizzards, wading in drifted snow up to my middle, and in torrential downpours which would drown a husky bullfrog, staged in darkness intense enough almost to subdue the gleam of a flashlight. I have been through the wringer of innumerable

oring to revolutionize medical customs and who have a distorted conception, or none at all, of the difficult problems facing the men in the ranks, on the firing line, and in the trenches, who day after day, night after night, come in actual hand-to-hand, rough and tumble, combat with disease in all its dreadful forms. Let legislative bodies attend strictly to the economic problems that underlie and create the medical tangle they are bunglingly attempting to straighten out and not butt into medical matters.

In the 1920's when money was plentiful and everyone was employed in a gainful occupation, earning their way along the highway of endeavor, not much was heard about doctor-robbers or inferior service. Window dressing for selling group medicine to the Jones family was not in vogue. But now with several hundred millionaires, reluctant to risk starting the wheels of industry moving, on one bank of the unemployment stream and several million idle indigent on the other bank, it suddenly has been discovered that the medical profession is reeking with rotteness and needs a drastic house cleaning.

I am not an economist—or a communist—I am just a humble doctor who usually mends his own business. But I can't help puzzling my brain painfully over such matters. Probably in this unequal social equation lies an answer—the *real* answer—why there is so much ugly muttering by the Joneses and their loquacious friends about the cost and quality of medical care. Let the Joneses and others earn a substantial wage sufficient to more than make ends meet and their howls will cease like those of a throttled wolf.

In the second place, medicine itself has some rehabilitation measures to institute for improving its standards, a few of which are loose and lax.

It must curb its surgeons

Medical men who have the operating room complex buzzing like a hungry bee in their hospital bonnets must be more restrained in saying to a patient "You should be operated upon." They honestly should feel that an operation is the only reasonably safe means of affording relief or saving a life and that they, themselves, would have to submit to one if afflicted similarly. Then, only, is it safely advisable to urge such a procedure.

If a surgeon thinks cautiously to himself "I would defer being cut up and try other measures if I were in such a dilemma," he should play fair with a patient and counsel him accordingly. There is a biblical injunction I believe, that lends support to this suggestion.

Surgeons at present unquestionably are performing near miracles. Nevertheless, there is too much surgery of sorts indulged in—far too

much. Operating enthusiasts never must be a patient's executioner by recommending an operation hurriedly or ill advisedly.

It must be remembered, however, that a saw-bones without a knife in his gloved mitt is as out of business as Lydia Pinkham's vegetable compound where there are no wombs. Such men are not mercenary—they just are a bit overzealous—like an amorous youth kissing his sweetheart.

In the third place, my profession should quit crying compassionately out of one corner of its mouth the gospel of free doctoring, while out of the other it indulgently whispers the idea of soaking the well-to-do to compensate for it. Exorbitant fees should be abolished. There should be an established price for medical service to charge all individuals in a community—and the cost should be fair and equitable. Generally speaking, wealthy people should be asked a fee approximately the same as all others *for the same service*. But if they consume more time and demand more labor, the responsibility of taking care of them is correspondingly greater and it certainly is justifiable to make them pay accordingly. Many of the moneyed class are very exacting and insist on what might be termed "luxury doctoring." Some want two calls when only one is necessary and require all the extra doodadles obtainable. They seek needless consultations and consume time by endless questioning and discussion. Others are no more trouble than the so-called poorer classes.

In the fourth place, it is the imperative duty of sane physicians everywhere to strive indefatigably to regain the lost faith and confidence which the public has had in them.

What is the primary urge, the underlying issue, that motivates the propaganda for group doctoring and creates other untried plans for adventurous journeys of exploration into the domain of sickness?

Dissatisfaction is my answer.

The public is disgruntled with the exorbitant charges made by famous specialists with exalted reputations for what a general practitioner frequently can do as well. Its members are fed up with being tossed from one "ologist" to another and of being sliced open and chopped up when operations are not necessary—when more conservative measures should prevail. It is surfeited with a diet of specialism, it is bored with the supposition that there is no good doctoring outside this field. Now, on top of it all, comes along this bizarre attempt to inoculate it with a group idea.

Is it any wonder the public is losing faith in medicine?

Is group medicine going to chase all the gonorrhea, syphilis, abortions, and illegitimate pregnancies, which so frequently adorn the life of immoral people, from their hiding places into the open? If it does I fear there will be merry moments in the home life of those who now attempt to sneak a doctor in the back door after dark to avoid a scandal

Just how is group medicine going to smoke out of their hidden mental retreat those cases of early cancer, incipient tuberculosis, beginning heart or kidney trouble, and what-not in timid individuals—and there are many, alas, so many, who are too frightfully alarmed to find out the nature of their ailment—who would rather dodge the cold facts than face the stern issue? Does it expect because the expense of an examination may be less that such weak-kneed specimens will stampee a clinic as though it were handing out passes to a circus?

"If you arrest a disease early, you'll have less work combating it later" is glowingly paraded in print.

True—very true But let the able question-asker explain intelligibly how one is to unearth these persons whose foolish heads remain buried like that of an ostrich in the sand of uncertainty

What has group medicine to offer the incurable chronics of various types and the maimed, deformed, and paralyzed derelicts floating pathetically on a storm-tossed sea of hopeless trouble? Are they to be given the once-over? What about Grandma Jones and Uncle Ed who are sitting by the fireside or confined to bed in a dismal back room, waiting timidly but expectantly for the arrival of the golden chariot to bear them aloft? Who is going to prescribe and supervise the pain-relieving measures necessary to their comfort, while an inoperable cancer slowly saps their life? Will the whole technical squad of experts hurry out en masse every time an anxious attendant rings in a three-three alarm? I wonder!

If group medicine were established and all decked out in its regalia of rosy colors, wouldn't the groups "A" contain the bigwigs, groups "B" the bontons, and so on down the scale to groups "X," "Y," and "Z"?

If group "A" were permitted to organize, wouldn't a group at the end of the alphabet be privileged to do the same thing? Wouldn't each group quickly establish a price level based on the respective ability of its personnel? Wouldn't an inferior group soon be forced by competition to operate on a scale that would rival the cheap, inferior lodge doctoring that once prevailed in rampant fashion? Solving some of these merry problems certainly will give group managers a terri-

fying headache if they ever have to face them

And isn't it a fact that less than 25 per cent of all illnesses combined are of a very serious nature? Isn't it true, also that only about 5 to 10 per cent of this serious-nature type really have an imperative need for group doctoring?

These are a lot of questions I am asking, but I never have heard a logical answer made in reply I am going to keep right on propounding them until I do or until group medicine gets off its hobbyhorse and leads the lame old nag to the bone yard where a lot of other queer companions are buried

There are at present no dependable actuarial statistics upon which group medicine can base a reliable charge for membership in such an organization. It can be established definitely only by a time test of trial and error Every group that has survived to the present moment is an experiment financially as well as professionally The entrance free has been found inadequate in some instances, and the ante has had to be raised. An individual has no reliable guarantee to protect his investment if the group machine suddenly gets ditched

Group medicine elucidates in a seductive picturesque way about the economy of the arrangement—about the "snug-fitting budget."

At first blush the term sounds like the name of a mysterious contraption a female ties around the rear end of her anatomy It promises, in expense curtailment, about the same glowing prospect of reduction that an elastic girdle does when an attempt is made to compress a pastry nibbling two-hundred pounder into a perfect thirty six.

Group medicine tinkles on the auditory nerve of the susceptible like sweet music, its colors on the medical horizon entrance the eye like a mirage of the Garden of Eden, but, when it is debunked, it is just another overzealous scheme to trap the unwary—just another cleverly baited hook to catch the poor fish

In my time I have seen a stampeded public go for a lot of strange will-o-the-wisps Maybe it will fall for this one, but woe betide!

What suggestions have fee addicts and opponents of group medicine like myself to offer for improving medical practice that will better it and fortify it against tinkering innovations? Plenty

In the first place let the public for a change lay off attacking physicians and try evangelizing the lawyers for a spell It has suffered flagrant abuses from the legal profession, without murmuring, through the creation of ambiguous laws and by the dilatory, too highly technical execution of court proceedings

Eliminate the social agitators who are endeavor-

and injured with both medicinal and mechanical safeguards far beyond the expectations of a generation ago. These and many many other things it has accomplished, and the end is not yet—far from it.

Why wreck a high-powered machine that turns out such amazing results and whose wheels are geared smoothly in behalf of the sick and suffer-

ing by throwing a revolutionary monkey wrench into its well-organized interior?

I have too much confidence in the good judgment and intelligence of my fellow citizens to believe they will do such a terribly radical thing unless they are permitted to go blindly about it.

617 Medical Arts Building

INTERMENT OF ALIEN PHYSICIANS AND NURSES

The organized treachery employed in the attacks on small countries, now known as "fifth column" activities, has led to extensive precautions in Britain. These include the internment of all enemy aliens between the ages of 16 and 60 and restrictions on other aliens. This regulation has caused serious inconvenience to alien physicians and students: we are informed by a London correspondent of the *J.A.M.A.* At the present time many are studying medicine at the Edinburgh school. Of these a large proportion are of German or Austrian nationality, mostly refugees from persecution. But it is not possible to be sure that some enemy emissaries are not among them, masquerading as refugees. For the safety of the country all aliens of enemy nationality have therefore to be interned. Some hold house

appointments in the hospitals. Their internment will therefore cause inconvenience to the hospitals as well as to themselves. Aliens who are not of enemy nationality are not interned but their movements are restricted, as possibly they also may include dangerous elements. There are many American undergraduates at Edinburgh who are prohibited by the regulation from being outdoors after 8:00 P.M. At the medical school about fifty are working. Representations are being made on their behalf for some relaxation of the curfew. One of the grounds is that their freedom of movement at night is necessary for attendance at emergency work in the hospital. Twenty-nine sisters and nurses of the German Hospital London, have been interned, following a visit of the police.

Correspondence

To the Editor

In an article in the *New York State Journal of Medicine* for August 15, 1940, entitled "Epidemic Diarrhea of the Newborn," Dr. Walter D. Ludlum takes us to task for not discussing adequately the means of prevention of epidemics of diarrhea. Our article was written with the object of acquainting the profession with a syndrome about which very little had been written at that time and we discussed chiefly the manner of onset and spread, the symptomatology, bacteriology, pathology, and treatment. We also devoted some space to a discussion of possible etiology and prevention. We specifically stated that the manner of spread might be "from contaminated to non-contaminated object by nurses, doctors or attendants," and that "fingers soiled by a contaminated diaper might have touched the nipple of a bottle which was later offered to a healthy child." We also suggested that the infection might be primarily a respiratory one.

Dr. Ludlum presents nothing new. He also suggests that the spread is probably caused by something which gets into the baby's mouth, either through droplet infection from a nurse, or from the nipple which has been contaminated. He suggests the wearing of masks and an aseptic technique in the nursery. We made similar suggestions in our article. We fail to see why similar suggestions made by us show "lamentable lack of logic and of scientific imagination," whereas when made by him they show "a combination of vision and logic."

Dr. Ludlum stresses the rules that are posted on the walls over the sink, and in the formula room. It has been our experience that such

measures are of little avail. We talk glibly of an aseptic technique in the nursery. Practically it does not work out. An aseptic technique can be carried out in the operating room where half a dozen or more trained individuals concentrate on doing one particular job, comparatively short in duration. It is not possible to continue such a technique where one nurse has to care for ten babies eight hours a day. All one can ask is that such a technique be approached. As for masks we are beginning to believe that they are worse than useless when worn by a nurse for eight hours a day. They get wet from the moisture of the mouth, and dirty. In the summertime particularly, they are uncomfortable, and nurses continually pull them up and down.

Dr. Ludlum's good results are not due to the masks nor to the posted rules, both of which incidentally we stressed in our article, but to the fact that he is a careful pediatrician constantly on the alert to see that there are as few breaks in technique as possible. As he says: "Eternal Vigilance is the price of safety."

It has been the experience in New York City that there have been few epidemics in hospitals with high general standards. On the other hand there have been repeated epidemics in institutions whose standards are low. Dr. Ludlum has set a high standard for his hospital and is apparently keeping it up. Also as he says, he is keeping his fingers crossed.

MORRIS GREENBERG M.D.
B. M. WRONKER, M.D.

143 W. 87th Street
New York City
August 22, 1940

I am aware that these observations are couched in strong language. Probably I will go home in an ambulance some dark night or land in the morgue, but the day for "shushing" and pussy-footing over such matters has gone with the wind. The time is here when each individual medical doctor should resurrect his buried ideals and burnish them until they glisten with renewed luster, when the crew of the craft of medicine should scrape the barnacles off its hull, adjust its compass to straight standards, and spread its sails to catch again the refreshing breeze of popular acclaim, or they will see their mighty ship wrecked beyond salvaging on the jagged reefs of experimental tampering.

And, finally, the medical profession should cease being guided passively by salaried professors, who, for every hour spent in actual bedside contact with the sick, have spent a thousand hours in lofty flights of theoretical and impractical dreaming and who have been allowed quiescently to dictate the economic policies and idealistic standards that determine whether its members are prosperous or destitute. The time has arrived when the "little man with the black bag" should edge in a suggestion or two.

It also should stop being so feebly inarticulate; it should cease behaving nonplussed and intimidated as though it were crumpling at the knees, and it should shake off the unwarranted attacks of its critics with at least some aggressive display of verbal vigor—some dictatorial assertiveness that will give a befogged and befuddled public a correct point of view.

I am not one to declare bombastically, "The king can do no wrong!" I hold no brief for unscrupulous misdoing or ruthless profiteering. I admit there are yet a few rooms in the noble hall of medicine that need to be tidied up a bit and have some of the cobwebs brushed from their walls. I do not maintain that medicine is so perfect, so simon pure, that it can fly with saintly wings to the pearly gates of paradise like a Virgin Mary and go dancing down the golden thoroughfares of heaven, Russian ballet fashion, before an approving audience of holy saints and pious angels, nor do I ever expect to see its robes laundered to a celestial whiteness that would rival the garb of Saint Peter—even if it continues to dole the indigent for nothing.

I sadly recognize that my profession in recent days has been subjected to much bitter, devastating criticism, some of which has been just willful misrepresentation and gross exaggeration by a few energetic detractors.

In considering such malicious attacks, its friends should remember a thief can get his picture in the paper if he steals a dozen chickens

while an honest man is passed up by the press as though he were poison. Let a conscientious doctor pull a wrong diagnosis and immediately all the sick pussies in the neighborhood are deprived of blood transfusions. His skill can hit the bull's eye nine hundred and ninety nine times in a thousand and he can bat his pills about as successfully as a Babe Ruth could swing a baseball, and no one gives a particular hoot or a tinker's dam. What is true of the individual medical doctor goes for the profession as a whole.

It is not the laity alone who spring to the attack with malignant alacrity. Sometimes—to paint a moral or adorn a tale—an exponent of newfangled doctoring within the fraternity itself pulls a dirty crack whereby errors are held up for ridicule. He deliberately does this to establish a direction sign so that the puzzled wayfarer may find his course more readily through the fog toward group medicine. He forgets the dictum, "Let him who is without sin cast the first stone", and so, alas, the sound of shattering glass reverberates painfully down the dignified corridors of our lofty medical institutions.

I want my profession to continue to be respected. I want to gaze upon it with pride and glory in its achievements. I believe it is a magnificent vocation, second to none. After my strenuous years of wallowing in its discouraging perplexities up to my Adam's apple—and having the cider squeezed out of it on several harrowing occasions—I still esteem the healing art so highly that I hope my son will enter it eventually and that my daughter will marry a doctor.

No practitioner today needs to skip down the back alleys in shame because he is a disciple of Hippocrates. He can hold his head high, for apologies are not required in behalf of his occupation. There is nothing vitally wrong with American medicine. It has raised the health standards of the United States until it surpasses the countries of the world in morbidity and mortality percentages; it practically has abolished diphtheria, typhoid fever, and has tuberculosis on the run; it has made cities and rural districts sanitary and healthful; it has been instrumental in creating pure water supplies and in eliminating the spread of disease by milk; it has been influential in erecting majestic hospitals equipped with intricate lifesaving devices of every type; it has standardized the nursing profession to a high point of efficiency and personnel; it has originated an anesthesia technique that makes operations of all kinds surprisingly safe and dependably painless; perfecting also an analgesic method that transforms childbearing into a comfortable exploit, and it has surrounded the ill

Graduate appears (She is very anxious and hurries toward Mr Government)

Nurse Graduate Oh, Mr Government, I'm so glad you're here We've been trying in every way to contact you Your daughter Mr Government, your daughter, Miss Liberty, has been brought in and I'm afraid she's seriously hurt

Mr Government What? Liberty? In this hospital? Hurt? Where? Tell me!

Nurse Graduate Yes, Mr Government and I'm so very sorry There was a traffic accident outside, and she was injured You see, the strikers were hurrying toward the municipal power plant and

Mr Government But tell me! Where is she?

Nurse Graduate In the operating room Mr Government

Mr Government Is she—is she conscious?

Nurse Graduate Dr Gray is operating Her mind was clear but her back Oh, Mr Government, she may never walk again!

Mr Government Liberty not walk again! Dr Gray?

Nurse Graduate Yes she wanted Dr Gray They have always been fond of each other He was there when she was born you know

Mr Statistics Was that in 1776 or was it?

(Suddenly the lights go out and the entire hospital is plunged into complete darkness A clamor of voices is heard and from the street outside come shouts of Hurrah Hurrah! We've won the strike—there isn't a light left burning in the whole city "The characters in the hallway exclaim, and they jostle against one another They are in confusion and in darkness A short time passes Presently, a wavering light appears on the stairway It descends and Nurse

Graduate recognizes Dr Gray wearing his lighted head lamp He appears very weary, but nevertheless he approaches the group and speaks)

Dr Gray Here, Gentlemen let me give you some light and (assisting Mr Government to his feet) let me help you, Mr Government I trust you are not injured?

Mr Government (recovering) I believe not But how—how is Liberty?

Dr Gray She has not completely reacted yet, but I'm confident about her future. In time she will be well and strong again And may I add, Mr Government, that Liberty has always been very dear to me I have jealously watched her growth from the cradle, and she must live with vitality and beauty unimpaired I pledge you my every effort to this end (Turning to Nurse Graduate) Thanks for preparing the emergency operating light We needed it badly

Mr Government (shaken) Thank you—greatly—both

(Slowly they all depart leaving Dr Gray and Nurse Graduate alone.)

Nurse Graduate I'm sorry to mention it again, Dr Gray, but you asked me to remind you about your income tax

Dr Gray Income tax? Income tax? Oh, yes

Nurse Graduate Yes it is due tomorrow and you have not yet filled in your income on item 9

Dr Gray Income? Income? Let me see! Put down my income as follows (slowly, but with spirit) The invaluable satisfaction of much work done according to the best traditions of what used to be the Medical Profession!

THE PATIENT BEFORE HE FEELS SICK

Knowledge of disease has now advanced so far that it is very often desirable to treat the patient before he knows that he is sick The implications of this situation were discussed on May 11 by Dr J Rosslyn Earp of the Division of Public Health Education New York State Department of Health, at a meeting sponsored by the American Association of University Women and held in the Y W C A at Elmira

Taking the first eight causes of death Dr Earp showed that at the beginning of the century there were approximately as many deaths from acute as from chronic diseases Now however less than one quarter of the deaths in this group are from acute disease

People stricken with an acute disease hasten to their doctor for aid Those suffering from a chronic disease of insidious onset tend to put off their visit to a doctor and to seek relief by self treatment Yet we know that in many cases the best hope for cure depends on early treatment—treatment even before the symptoms appear This is true not only of tuberculosis but of several other diseases including the two at the

top of the list of causes of death cancer and heart disease It is true of diabetes, of many cases of syphilis and of certain kidney infections that may cause high blood pressure later on

An attempt has been made to adjust the private practice of medicine to this situation. For nearly twenty years now the periodic medical examination has been advocated by the American Medical Association But it has not received wide acceptance A really thorough examination using all the latest diagnostic instruments and specialists to interpret the findings is so expensive that it is not practical It will therefore be necessary to make examinations for the first stages of other diseases as we now make examination for the first stages of tuberculosis That is, we investigate to determine which age groups and which social groups are most subject to the disease and in these groups we make a routine search using special equipment in the hands of specialists By cost accounting methods we are able to get the greatest possible value for money spent In this way patients can be found before they know that they are sick

HE BLEW

The Associated Press reported a birth certificate filed in Columbus Ohio, showing only the mother's name

In the space reserved for the father's name was written
Gone with the Wind "

—J A M A

Special Article

TRADE AND PROFESSION

(Sequel to "Tragedy and Comedy," published in the April 1, 1940 issue)

G P BERGMANN, M D, Mattituck, New York

Scene I

Sterilizing alcove adjacent operating room in Independence Hospital. It is night. Nurse Graduate and Nurse Probation are conversing while they prepare instruments and dressings.

Nurse Probation Whom's he operating on in there now?

Nurse Graduate I don't know yet. They called her "Liberty." She was hurt on the street.

Nurse Probation How'd she get hurt?

Nurse Graduate I heard them say downstairs that a bunch of strikers were hurrying by and that she was trampled on.

Nurse Probation Did they say she had a fractured spine? What's that?

Nurse Graduate That's a broken backbone. Dr Gray is trying to help her by relieving pressure on the vital nerve centers.

Nurse Probation Oh, my, I'm awfully tired! Is he going to work most of the night again?

(The hospital lights flicker.)

Nurse Graduate The lights! That's terrible! Maybe those strikers are trying to wreck the municipal power plant again!

(She hurries away.)

Nurse Probation (to herself) They work all night. They never complain—you'd think they enjoyed it. And that Dr Gray—work, work, and old enough to be my grandfather. And Nurse Graduate has been here so long now she doesn't know any better either. I suppose she'll stay here until she dies. Study and slave, that's all we do. (She sits down.) And these doctors, as soon as they discover something that's good, what do they do? Patent it? No! They just tell the whole world about it and look for something else. That's part of their precious ethics. I suppose. If that's what I'm getting into I'll

(Nurse Graduate returns.)

Nurse Graduate There, that's in readiness. And what are you doing, sitting there and dreaming?

Nurse Probation (startled) Oh, just thinking. You see, out in Farmingville we live on a farm and Mr. Government pays my father for not planting potatoes on certain acres that he never plants anyway. Maybe if I trained at the "Nudeel" Hospital I'd get paid for patients who never came in. And maybe

Nurse Graduate (interrupting) Sure—another crazy idea, and maybe (sarcastically) if you went to the "Nudeel" you could have a nice little private sit-down strike of your own. No doubt you could have a cosy little armchair to do your sitting in.

(She hurries away.)

Scene II

Interior of the governmental omnibus while on its round of hospital inspections. It is still night. Mr. Government, Professor Bureaucrat, Mr. Statistics, Mr. Indictment, and the Court Brothers are the passengers. Each of them is in deep thought as he contemplates a report in his hand.

Mr. Statistics That completes our data, Mr. Government, on your largest institution in this section, the "Nudeel" Hospital. You see how efficiently it can function. It has 500 beds, averages 52 patients per day, and has an executive lay staff of 103. There are 6 doctors and 15 nurses on the professional staff. The deficit for the past six months has only been slightly in excess of \$200,000, but this has been met by adequate appropriation. We think, however, this deficit can be lowered by reducing the number of doctors on the staff.

Mr. Government Thank you. What is the next hospital we shall visit in this section?

Mr. Statistics It is "Independence" Hospital, Mr. Government, one that we have not yet taken over. It appears overcrowded and ill managed. There are insufficient beds, and the local people are continuously obliged to contribute voluntarily to its support. Your former family physician, Dr. Gray, is still in charge. He receives no tangible remuneration but continues his work there.

Mr. Indictment I strongly suspect that he violates the labor law in respect to hours of work. The matter is under investigation.

Mr. Government I see.

Mr. Statistics Moreover, on his income tax report of last year under item 9 (income from business or profession) Dr. Gray showed a deficit. His report of this year, which is due tomorrow, has not yet been received.

Professor Bureaucrat By the way, Mr. Government, inasmuch as there is no longer any difference between "Business" and "Profession," I have arranged that item 9 on the new income tax forms shall read simply, "Income" instead of "Income from Business or Profession."

Driver of Vehicle (bringing vehicle to a stop) Independence Hospital!

Mr. Statistics (turning to driver) This makes 37 minutes overtime labor on your shift for which the pay is time plus half time.

Scene III

Reception hallway of Independence Hospital. Mr. Government, Professor Bureaucrat, Mr. Statistics, Mr. Indictment, and the Court Brothers have hardly entered when Nurse

DISTRICT BRANCHES

1407

United States, with a deservedly high reputation for diagnosis and treatment of all medical and surgical affections, and has a staff of specialists for every branch of medicine. It is located in Ontario County, near the geographic center of the eight counties composing the Seventh District of New York State and is easily of access by good roads from all points of the compass.

Morning Session 9 45 o'clock—Daylight Saving Time

Registration at main entrance of Clifton Springs Sanitarium

Motion sound pictures in Gymnasium
Dr Benjamin J Slater, Rochester, N Y

"Tracking the Sleeping Death"
"The Romance of Radium"
"The Story of Dr Carver"

These motion pictures are of the historical or inspirational type and are devoted to episodes of medical interest that have been outstanding in their connection with human welfare and the medical profession

Remarks by officers of the Medical Society of the State of New York

James M Flynn, M D, Rochester, N Y, *President*

Peter Irving, M D, New York City, *Secretary*

Joseph S Lawrence, M D, Albany N Y, *Executive Officer*

Mr Dwight Anderson New York City *Publicity Director*

The Recognition and Prevention of the Late Toxemias of Pregnancy in Their Incipient Stages"

Herbert F Dyer M D, Hamilton, Ontario
Discussion by James K Quigley, M D, Rochester, N Y, Thomas W Maloney, M D, Geneva, N Y, and A B Chidester, M D, Auburn, N Y

Dr Dyer's paper is the result of prolonged personal work on his part and that of his colleagues in Hamilton. It is practical, reasonable, and workable in its application to these highly important maternal conditions

Business Meeting

1 15 P M—Dinner in main dining hall of Sanitarium Tickets 75¢

2 00 P M—Group picture main entrance

Afternoon Session 2 15 o'clock

"Treatment of General Peritonitis Following Ruptured Appendix"

Elmer Milch, M D Buffalo N Y
Discussion Lynn Rumbold M D Rochester, N Y Alfred K Bates, M D Auburn, N Y, and H J Knickerbocker M D, Geneva, N Y

Dr Milch's paper is a valuable contribution to the study of peritonitis. It clarifies and simplifies the lines of treatment in the form of a graphic analysis and teaches a method of treatment that, in his hands, has materially reduced mortality rates in a lengthy series of cases

Medical Correct or Incorrect" Contest
Master of Ceremonies Floyd S Winslow M D Rochester N Y

Six of the personnel from the medical staff of the Clifton Springs Sanitarium Adrian S Taylor, M D, S A Munford, M D, Paul V Newland, M D, J W Karr M D, W C Eikner, M D, and O E Anderson, M D

Six physicians from the Seventh District Branch. All are county society presidents G M Doolittle, M D, R F D Gibbs, M D, A W Holmes, M D, A D Kaiser, M D, R A O'Brien, M D, and C L Steyaart, M D

This is a quiz contest, similar to those heard over the radio, like an old-fashioned "spell down" contest, the winner being the last man of the twelve doctors to survive the quiz

Note

The management of the Sanitarium has generously offered to give bath or massage treatment on the day of the meeting to any of the doctors or their ladies desiring it. Arrangements may be made at the desk

Entertainment for Ladies

A movie travelogue—"A Trip to the Mediterranean"—has been provided for the entertainment of the ladies. It will be shown in the Chapel at 2 15 P M by Dr B J Slater of Rochester

This series of moving pictures is shown from films taken by Dr Slater on a recent trip to the Mediterranean and countries bordering thereupon.

Seventh District Branch Officers

President Frederick W Lester, M D, Seneca Falls

1st Vice-President Benjamin J Slater, M D, Rochester

2nd Vice-President Homer J Knickerbocker, M D, Geneva

Secretary John J Finigan, M D, Rochester

Treasurer Howard S Brasted M D, Hornell

Presidents of Component County Societies

Cayuga William A Tucker, M D, Auburn
Livingston George M Doolittle M D, Sonyea
Albion Albert D Kaiser M D, Rochester
Ontario Albert G Odell M D Clifton Springs
Seneca Robert F Gibbs M D Seneca Falls
Steuben Richard A O'Brien, M D, Corning
Wayne Charles L Steyaart M D, Penn Yan
Yates Allen W Holmes M D, Lyons

Local Arrangements Committee

Adrian S Taylor M D, Superintendent Clifton Springs Sanitarium and the Staff

General Committee

Alfred W Armstrong, M D Canadaigua
M R Blakeslee M D, Shortsville
H S Brasted, M D Hornell
J J Finigan M D Rochester

Thirty-Fourth Annual Meetings of the District Branches

PROGRAMS



Fifth District Branch

Tuesday, September 24, 1940
Hotel Snyder, Little Falls, New York

**Morning Session 10 00 o'clock—Daylight
Saving Time**

"Newer Concepts of Hypertension"

Harry Dan Vickers, M D, Little Falls, N Y

The range of normal blood pressure will be discussed. A brief consideration of some newly discovered factors in the etiology of blood-pressure disturbances with especial emphasis on disturbances of the autonomic nervous system. Preclinical recognition of potential hypertensive subjects is urged in order that high blood pressure can be better prevented than treated.

"Diagnosis of Carcinoma of the Lung"

George G. Ornstein, M D, New York City
*associate professor of medicine, New York
Medical College and Flower Hospital, asso-
ciate clinical professor of medicine, New
York Post-Graduate Medical School, Columbia
University*

A classification of primary carcinoma of the lung based both on pathologic and clinical investigations is to be presented. The various types of primary carcinoma of the lung with its significant symptoms, physical findings, and x-ray appearances will be demonstrated. The treatment of the various forms of primary carcinoma of the lung will be discussed.

"Appendicitis in Children"

Brewster C. Doust, M D, Syracuse, N Y
*professor of pediatrics, Syracuse University
College of Medicine*

1 00 P M —Luncheon and Introduction of Guests

Afternoon Session 2 00 o'clock

Business Meeting

"Symposium on General and Local Cryo- therapy"

John C. A. Gerster, M D, New York City
*assistant professor of clinical surgery,
Cornell University Medical College, clin-*

*cal professor of surgery, New York Uni-
versity College of Medicine*

Historical—Local—General Technical details of administration, local—general. Acceptances and rejections, i.e., indications and contraindications. Results—general and local. Conclusions.

"Chemotherapy in General Practice"

Henry van Zile Hyde, M D, Syracuse, N Y
Sulfanilamide, sulfapyridine, and sulfathiazol have had a wide usage and are reported upon in a vast and confusing literature. The paper attempts to digest this material as it affects the use of these drugs in general practice. Proper observation of patients under treatment, without excessive laboratory work, is discussed.

Entertainment for Ladies

The ladies of the Herkimer County Auxiliary will meet the visiting ladies at the Hotel Snyder and at 11 30 o'clock they will take a drive to Canajoharie, where they will lunch at the historic Beech-Nut Hotel. In the afternoon they will be shown through the Beech Nut Plant.

Fifth District Branch Officers

President Fred C. Sabin, M D, Little Falls
1st Vice-President E. C. Reifenshtein, M D, Syracuse
2nd Vice-President William Hale, M D, Utica
Secretary Sherman M. Burns, M D, Oswego
Treasurer Edgar O. Boggs, M D, Lowville

Presidents of Component County Societies

Herkimer George J. Frank, M D, Frankfort
Jefferson Harold L. Gokey, M D, Alexandria Bay
Lewis Thomas A. Lynch, M D, Lowville
Madison Everett T. Centerwall, M D, Morrisville
Oneida Frank J. Rossi, M D, Utica
Onondaga Shewster C. Doust, M D, Syracuse
Oswego Harrison M. Wallace, M D, Oswego

Seventh District Branch

Thursday, September 26, 1940

Clifton Springs Sanitarium, Clifton Springs, New York (celebrating its 90th Anniversary)

The Clifton Springs Sanitarium, which is our host for this meeting, was established in 1850 as a small institution. It has grown now to be one of the largest sanitariums in the

Montgomery	S L Homrighouse, M D , Amsterdam	Schenectady	F Leslie Sullivan, M D , Scotia
St Lawrence	David M Mills, M D , Gouverneur	Warren	Herbert A Bartholomew, M D , Glens Falls
Saratoga	Ralph B Post, M D , Ballston Spa	Washington	Vernon K. Irvine, M D , Granville

Eighth District Branch

Thursday, October 3, 1940

Hotel Niagara, First Street and Jefferson Avenue, Niagara Falls, New York

Morning Session 9 30 o'clock

Motion Pictures

'Occiput Posterior' (This film includes two deliveries, one of forceps rotation and delivery, and one of Podalic Version)

Arthur H Bill, M D

"Varicose Veins Their Treatment by the Modern Combined Ligation and Injection Treatment"

H O McPheeters, M D

"Cardiac Irregularities" (2 reels)

Carl J Wiggers, M D

'The Diagnosis and Management of Early Pulmonary Tuberculosis'

N Stanley Lincoln, M D , Mount Morris, N Y
superintendent, Mount Morris Tuberculosis Hospital

The control of tuberculosis to be successful must be based upon a program of case finding so thorough and complete as to reveal new cases of tuberculosis in the early stages before the disease has caused a significant destruction of pulmonary tissue or alteration of respiratory function. The management of these cases will be outlined with the desirable features of immediate hospitalization continued close medical supervision with complete bed rest during the phase of clinical activity, this being supplemented by surgical procedures when the disease does not respond satisfactorily to the conventional method of handling

The Rationale of Common Procedures Used in the Care of Head Injuries"

W P Van Wagenen, M D , Rochester, N Y
associate professor of neurosurgery, University of Rochester School of Medicine

An appreciation of the alterations of the intracranial circulation of the blood and cerebrospinal fluid is most essential for the intelligent treatment of head injuries, both in the early and late phases. Factors influencing these two systems of fluid circulation are discussed together with practical therapeutic considerations

12 30 P M —Luncheon and Introduction of Guests

Afternoon Session 2 00 o'clock

Business Meeting

"Problems in the Care of the Premature Infant"

Julius H Hess, M D , Chicago
professor of pediatrics and head of the department, University of Illinois College of Medicine, Chicago

No one has taught us as much about the methods for reducing the mortality rate in premature and immature infants as Dr Hess. His premature service at Michael Reese Hospital serves as a model for pediatric institutions throughout the country. He will discuss the practical measures to be carried out in caring for those delicate infants

Round Table Discussion on Therapy

A. H Aaron, M D , Buffalo, N Y
professor of clinical medicine, University of Buffalo School of Medicine

The use of some of the newer and well-known products in the treatment of disease. Questions especially covering chemotherapy, hormones, and vitamins will be solicited from those attending

Assisting Drs F D Leopold, Frank Myers, W J Orr, W J Rose, L M Siegel, and L Maxwell Lockie

Eighth District Branch Officers

President Leon J Leahy, M D , Buffalo

1st Vice-President Robert C Peale M D , Olean

2nd Vice-President Peter J Di Natale, M D , Batavia

Secretary John C Kinzly, M D , North Tonawanda

Treasurer Hall G Van Vlack, M D , Jamestown

Presidents of Component County Societies

Allegany Phillips L Morrison, M D , Bolivar

Cattaraugus Theodore J Holmlund, M D , Cattaraugus

Chautauqua Harry E Wheelock, M D , Fredonia

Erie Herbert E Wells, M D , Lackawanna

Genesee Eugene G Ribby, M D , Byron

Niagara Robert P Reagan, M D , North Tonawanda

Orleans John S Roach, M D , Medina

Wyoming G Stanley Baker, M D , Castile

Figures just compiled by the United States Public Health Service show a sharp increase

in cases of poliomyelitis reported in 1939 over 1938, a year of unusually low incidence

Leo F Simpson, M D , Rochester
B J Slater, M D , Rochester

E T Wentworth, M D , Rochester
F S Winslow, M D , Rochester

Fourth District Branch

Tuesday and Wednesday, October 1 and 2, 1940
Hotel Van Curler, Schenectady, New York

Tuesday, October 1 2 00 o'clock

Proprietary Medicines"

A H Aaron, M D , Buffalo, N Y
professor of clinical medicine, University of Buffalo School of Medicine

It will be shown that official preparations are available costing less to the patient with a relatively greater profit to the pharmacist. These are compounded to meet the individual patient's condition. The dangers in using products under a name that may cover toxic chemical substances is avoided. Office dispensation is discussed with suggestions as to products to be used.

Problem Fractures About the Elbow"

Clay Ray Murray, M D , New York City,
associate professor of surgery, College of Physicians and Surgeons, Columbia University

Subject will be presented from the standpoint of the recognition by the general practitioner of those cases that entail particular difficulties and the need of expert detail treatment and in which, if such treatment is delayed, disaster may result.

Acute Cardiovascular Emergencies"

John E Destruck, M D , New York City

This discussion emphasizes the peripheral circulatory emergencies. The physiology of the development of shock due to hemorrhage is reviewed with respect to its treatment. Certain comparisons are made to secondary or surgical shock. The discussion of cardiac emergencies themselves is limited to a few remarks on the treatment of pericarditis and the indications for phlebotomy in the presence of pulmonary edema.

Convalescence at the Spa"

Edward J Callahan, M D , Saratoga Springs,
N Y

The proper convalescence is important for every patient recovering from any illness, either acute or chronic. It requires a regulated program under medical supervision, using measures suitable for the patient and facilities to carry out the program properly. The place of a Spa in this program of convalescence as illustrated by the therapeutic regimen at the Saratoga Spa, will be discussed.

Business Meeting—Election of Officers

Evening Session 7 00 o'clock

Dinner

Address by James M Flynn, M D , Rochester,
N Y *President, Medical Society of the State of New York*

Entertainment

Wednesday, October 2 9 30 o'clock

"Pentothal Sodium in General Surgery"

Edward S McDowell, M D , Plattsburg, N Y
William W Johnson, M D , Plattsburg
William H Ladue, M D , Plattsburg
(*Collaborators*)

Criteria for an ideal anesthetic, characteristics of pentothal sodium, administration—hazards—antidotes, analysis of cases.

"Medical Care of the Indigent Sick"

Louis H Bauer, M D , Hempstead, N Y

History of medical relief in New York with development of T E R A and Department of Social Welfare. Program sponsored by State Medical Society to eliminate delays, inconsistencies, and injustices to patient and doctor. Counter proposal of state welfare officials. Elimination of bureaucratic inefficiency and red tape, and the establishment of local autonomy with recognition of the county medical society as the supervising agency as in compensation work, essential to any plan.

"Treatment of Unusual Fractures"—Lantern Slide Demonstration

Frederick F McGauley, M D , Schenectady,
N Y

The increasing number of serious automobile accidents, as well as catastrophes in industrial plants, has made the general surgeon look for every available assistance to obtain good results. With compound as well as simple fractures we have used the Roger Anderson apparatus in complicating cases. During the past two years we have applied this method in 26 cases and feel that we have better results than with any previous technique.

Entertainment for Ladies

The Women's Auxiliary of Schenectady County will entertain the ladies after they register at the Hotel Van Curler.

Fourth District Branch Officers

President Sylvester C Clemans, M D ,
Gloversville

1st Vice-President E Harrison Ormsby, M D ,
Amsterdam

2nd Vice-President Wm Warriner Woodruff,
M D , Saranac Lake

Secretary Harold A Peck, M D , Glens Falls
Treasurer John E Free, M D , Ogdensburg

Presidents of Component County Societies

Chilton A B de Grandpre, M D , Plattsburg
Essex L Herbert Gaus, M D , Ticonderoga
Franklin Kenneth A Tulloch, M D , Malone
Fulton Everett N Perkins, M D , Gloversville

the various types of operation. Much more important, though, is the fact that he is capable of judging which cases should be sectioned, or that he associate himself with someone who is so qualified.

There are comparatively few true indications for cesarean section. Absolute disproportion of course, heads the list. No one will argue with the physician who elects to do a cesarean on a patient with a true conjugate of 8 cm or less. So, likewise, a transverse of the outlet below 6 cm, especially if the posterior sagittal measurement is correspondingly small, may be considered as an unquestioned indication. Tumors, which really obstruct the pelvis may also be considered beyond the realm of argument. In this class may also be placed transverse presentation of the fetus, providing the diagnosis is made early in labor when the patient is a proper surgical risk. Most complete placenta praevias would fall in this category.

At the other extreme may be mentioned indications that are definitely open to controversy, the choice of cesarean being definitely ascribable to the personal experience or belief of the individual physician. Among these may be mentioned cardiac disease, tuberculosis, and other constitutional diseases. Rarely physicians will consider certain types of toxemia of pregnancy best handled by abdominal delivery including the rugged individualists who still perform sections for eclampsia despite the untoward results generally reported for this method of treatment. Here, too, should be listed fetal distress, especially prolapse of the cord, where the value of the child is placed above the added risk to the mother and certain abnormal positions of the fetus that usually may be delivered per vaginam, notably posterior positions and breech presentations.

Between these two extremes, namely, those that are absolute indications and those more or less dependent on personal preference, falls the largest group of all. These cases may or may not best be handled by cesarean. The situation is such that cesarean section must be considered and is elected only after a complete evaluation of the pros and cons with especial consideration being given to the comparative maternal risk of abdominal delivery versus vaginal delivery.

Heading this list is that condition most difficult to evaluate namely, the so-called borderline pelvis—the unengaged head with a true conjugate between 8 and 10 cm, or even more difficult the contracted outlet between 6 and 7 cm where the contour of the pubic arch and length of the posterior sagittal diameter mean so

much. It is not the purpose of this article to go into a detailed consideration of the borderline pelvis and the necessary test of labor. It is merely the intent to point out that this situation is deserving of the nicest kind of obstetric judgment and unless such situations are properly evaluated many women will be subjected to unnecessary risks.

In a similar classification must be placed abruptio placenta. Certain cases of this type are unquestionably best handled by abdominal delivery, on the other hand the accompanying shock in many instances is so great that laparotomy may entail too much risk. Certain types of placenta praevia must be considered in this category.

Included under such a head, we must also consider the so-called "elderly primip"—situations similar to that cited in the case report at the beginning of this article.

We need only to think seriously of the general 10 per cent maternal mortality with cesarean to realize the importance of reserving abdominal delivery for those instances where it promises to give the best ultimate result.

One method that gives reasonable assurance that cesarean section will be performed only when really indicated is the recent adoption by many hospitals of the rule requiring competent obstetric consultation before this operation may be done. In fact many institutions now require two expert obstetric opinions. It is by such meticulous attention to indications that the patient physician, and hospital are assured of maximum protection. Added assurance of the proper management of cases is also enhanced by a monthly staff review of all the hospital's operative deliveries.

It is quite generally conceded that American obstetrics tends to emphasize operative obstetrics. Most statistical studies reveal that mortality rates are almost in direct proportion to the incidence of operative deliveries, including cesarean section. This situation is deserving of our careful attention. Many obstetric centers pride themselves on a low incidence of cesarean section, feeling that such low incidence is an indication of conservative obstetrics. Some hospitals boast of only 1 or 2 per cent cesarean sections. On the other hand some hospitals showing as high as 10 per cent of their deliveries accomplished by cesareans, present excellent mortality figures. There would seem to be a happy medium between these extremes. If we are to obtain the excellent results that cesarean section should give we must individualize each potential section. (1) the indications must be proper, (2) true evaluation must be given to

Maternal Welfare

From time to time under this heading articles appear on obstetric subjects which are deemed of importance as aids to improvement of maternal welfare in New York State. The members of the committee are Charles A. Gordon, M.D., chairman, James A. Quigley, M.D., and Ferdinand J. Schoeneck, M.D.

Cesarean Section

WHEN should cesarean section be properly employed to accomplish delivery? The answer to this question entails the highest degree of real obstetric judgment.

Case Report

Mrs. W. F., aged 43, had an essential past history of chronic gallbladder disease and a four-month miscarriage at the age of 35. Patient had been undergoing menopause for the past two years. An exacerbation of nausea and vomiting was attributed to the gallbladder disease. However, a diagnosis of pregnancy was confirmed by a Friedman test. Pregnancy was uneventful. Pelvic measurements were normal. At term, the membranes ruptured prematurely, followed in one hour by the onset of labor. Patient was hospitalized and examination showed the baby to be in an R.O.P. position. Rectal examination revealed an unengaged head, thick lower uterine segment, and long cervix which admitted the tip of a finger. Contractions were every two minutes. After five hours of active labor, rectal examination was the same. The patient was then delivered of an 8-pound female by laparotrachelotomy (low cesarean section). Convalescence was uneventful.

Was cesarean section the proper treatment in this case? The indications were listed as (1) valuable baby. It is obvious that the chances of conceiving again were very meager, and it may be stated that both the patient and her husband were very anxious to have the child. (2) The lack of progress in six hours of really active labor, with rupture of membranes and a posterior position, gave indication of a long and difficult labor. (3) The patient's age (43 years) added to the probability of a complicated labor.

On the other hand, it must candidly be admitted that this labor could have progressed satisfactorily and terminated in a spontaneous delivery. Certainly if this patient were twenty years younger, it would have been close to criminal to subject her to cesarean for the above indications.

This case is presented to illustrate some of the factors that must be considered in advising cesarean section. Many others must also be considered. For instance, how do we explain the fact that cesarean mortality throughout the country is close to 10 per cent, whereas many

obstetric clinics report cesarean mortality in fractions of 1 per cent. One explanation for this discrepancy appears to be in the type of cesarean section performed. Statistics seemingly show rather conclusively that the classic type of operation gives very poor results in potentially and truly infected cases. The laparotrachelotomy, or low cesarean, is not particularly difficult from a technical standpoint, yet comparatively few surgeons perform this operation. In truly infected cases an extraperitoneal operation or a Porro cesarean (cesarean followed by supra vaginal hysterectomy) must be employed. Despite these known facts, the classic type of operation is generally employed, except in the larger obstetric centers. Perhaps even more important, is the proper selection of cases for cesarean section. This operation cannot be considered as a method of getting out of all sorts of obstetric difficulties. A patient who has been in labor a long time and has had multiple vaginal examinations recovers from a classic cesarean only through the grace of the Lord. Many authorities feel that this improper selection of cases for cesarean and the choice of the wrong type of operation accounts for the mortality discrepancy between the statistics of the country as a whole and the larger obstetric clinics.

Another consideration is the employment of the general operating room for cesarean sections. It is utopian to say that every hospital should set aside a "clean" operating room to be used only for cesareans. Yet it is generally conceded that satisfactory results can be obtained only if cesareans are performed in "clean" operating rooms. It is common sense to realize that a cesarean performed in a room that has been the recent site of a laparotomy for a ruptured appendix greatly enhances the cesarean patient's chances of becoming infected.

Much has been said of the "man with the scalpel" as a factor in cesarean mortality. While it is true that this operation, like any other, can be bungled, cesarean section is not a difficult operation and any physician capable of major surgery should be qualified to perform cesareans. However, anyone qualifying himself to do this work should be able to perform

Medical News

Forgeries of Physicians' Drug Prescriptions Are Increasing

A SHARP rise in the number of arrests in New York State during July for forgeries of physicians' narcotics prescriptions, as told in *Health News*, indicates that legitimate stocks of such drugs must be more zealously protected than ever before.

On July 11 an investigator of the Department's Bureau of Narcotic Control arrested eight persons on a charge of passing forged narcotic prescriptions at a pharmacy in New York City. Two arrests were also made in New York City, July 9, and three in Binghamton, July 2. Arrests for similar violations were made during the month in Buffalo, Batavia, Syracuse, James town, Salamanca, and Hancock.

This drive against the illegal diversion of nar-

cotic supplies from legitimate medical stocks has been conducted by the Bureau in cooperation with local police authorities. It is similar to that which is being carried on by federal narcotic agents and which was announced in press reports under date of July 11.

Owing to the increased cost of bootleg drugs and the difficulty of obtaining them, it is believed that the number of arrests in July exceed that for any month thus far. As a result of cutting off illegal supplies it is probable that addicts will resort more and more to forgery of physicians' prescriptions and to theft. Physicians, pharmacies, and hospitals are urged to exercise every precaution in the protection of medical stocks.

Complete Data with Laboratory Specimens Essential

THE importance of furnishing complete clinical data with specimens for laboratory examination cannot be overemphasized. Physicians who supply all pertinent, available information in regard to a patient cannot fail to realize the advantages that are derived from this close cooperation with the laboratory. Not infrequently the examination requested by a physician may yield information of no significance, while if the clinical data concerning the patient were available to the laboratory staff, additional tests suggested by the history might be performed or specimens of a different nature might be requested for study.

Physicians are therefore urged by the State Department of Health to cooperate in this respect not only with the Division of Laboratories

and Research but also with the local approved laboratories throughout the state. If insufficient space is provided on the history form, the information should be sent in a letter under separate cover.

The question frequently arises whether first-class postage is required when the information requested on the history forms is furnished. An opinion has been obtained from the postal authorities that the forms distributed by the Division of Laboratories and Research when filled out in writing constitute permissible enclosures with specimens to which they relate, such specimens may be mailed at the third- or fourth-class rate of postage, in accordance with section 589, paragraph 4, of the Postal Laws and Regulations.

A Survey of Children with Impaired Hearing

MANY children between 4 and 8 years of age have hearing impairment which is neither recognized nor diagnosed because these youngsters are not seen by physicians.

Abundant evidence in support of this statement is recorded in the recently published report of a survey conducted in Columbia County to determine the extent of defective hearing among children of preschool age and other facts bearing on the discovery and treatment of young children with impaired hearing, says *Health News*. This study was undertaken on the recommendation and under the auspices of the Temporary State Commission to Examine, Report Upon and Recommend Measures to Improve Facilities for Care of Hard of Hearing and Deaf Children and Deaf Persons, of which Senator Clifford Hastings is chairman. The work was done in cooperation with members of the Commission, the Albany district health officer, the Columbia County Department of Health and the Division of Maternity, Infancy and Child Hygiene, and the Division of Communicable Diseases of the State Department of Health.

According to the report, which was printed at the New York State School for the Deaf by

pupil apprentices, the children chosen for this study had had one of the contagious diseases of childhood, i.e., measles, whooping cough, or scarlet fever. Preference was given to those who had contracted the disease within two years of the time of the study and who had been of preschool age, 6 years old or less, at the time of illness.

Of the 491 children examined, 44.8 per cent had an average hearing loss for speech tones of less than 10 decibels in both ears, which is considered to be within normal range. Of the remaining 55.2 per cent, there were 30 children who were found to have a loss of 21 decibels or more in one or both ears and whose hearing was therefore actually impaired. Of this number only 8 had ever received treatment of any ear condition.

The observations indicated that the most fruitful method of discovery of children with impaired hearing is ear examination by an otologist, including individual audiometric testing, of those who have had discharging ears or inflammation of the middle ear.

The report includes a recommendation that every child who has suffered the diseases of

the presence or absence of real or potential infection including rupture of membranes, (3) the operating room, including technic, site, and personnel must be satisfactory, (4) the correct type of operation must be selected and

performed by capable physicians, and (5) that ethereal but essential thing called "obstetrical judgment" must play its part. In all fairness, such a valuable procedure as cesarean section should not be abused

GUILTY!

A Harvard professor has come to the conclusion that the human race is degenerating and particularly blames the medical profession for having saved the lives of "hundreds of thousands of debilitated organisms which are adding to the burden of society by reproducing more and worse offspring." He says, "Medicine today is an extension of the maternal instinct mixed up with scientific techniques. It operates in an odor of sanctity and formaldehyde." Guilty! we have not cured the ills of society and we have not undertaken to order the evolution of the human race! We still adhere to the eight-century-old prayer of Maimonides

"Grant energy unto both body and the soul
That I might e'er unhindered ready be
To mitigate the woes,
Sustain and help
The rich and poor, the good and bad, enemy
and friend
O let me e'er behold in the afflicted and suffering
Only the human being"

Let the Fuehrers and the Supreme Commissars do the purging. There are a lot of human beings left on the earth, in mass they are terrible but individually few are bad. We deal with individuals. Our purpose is the care of the sick and the prevention of illness. Our society exists that we may take better care of the sick. I think the great attraction of our profession to the promising youth of today is this humanitarian appeal.—*Harry C. Messenger, M.D., Providence*

SIMPLE DIET FOR INFANTS' DIARRHEA

A simple and highly nutritious dietary method of treating diarrhea of the newborn infant with pectin-agar, which also is adaptable for home use in treating older infants and children, is described by Philip J. Howard, M.D., Detroit, and Charles A. Tompkins, M.D., Omaha, in the *J.A.M.A.*, June 15. The beneficial results of such treatment of seventy-three children are reported.

Pectin is the congealing or jellying carbohydrate substance of apple sugar, and agar is an indigestible solidifying gelatin-like carbohydrate found in milk sugar, certain seaweeds, beet sugar, and some gums.

Pectin-agar is added to the child's formula. It is made by cooking a soluble prepared powder in milk or other suitable liquid. The composite action of this high carbohydrate food results in an easily digested, nutritious food which mechanically produces formed stools, favors normal intestinal action, absorbs bacteria with their toxins (poison wastes), systemically combats acidosis, protein destruction, and water loss, chemically combines with certain bacterial toxins and body wastes, and locally promotes healing

COLD SCIENCE IS NOT ENOUGH

I hope the time will never come when the test tube and the microscope, with all of their amazing value to mankind, will ever be permitted to displace the fundamental humane and human instincts which make up the great physician. The physician who gets nothing out of his practice except his fee has been a failure.

There is a definite valuation in the personal relationship which exists between the doctor and his patient. One well-trained doctor may be just as able as another to apply the truths of science in the treatment of disease, but the time comes in the life of each of us when the cold facts of science do not prevail. The personal side of the practice of medicine plays as important a part as the service which the people not only desire but demand. It is that service of sympathy, pity, cheerfulness, and confidence which the doctor brings to the patient which is so essential. No amount of scientific efficiency can take his place in the dark hours of sorrow and trouble so common in the experience of all of us. President Eliot of Harvard said "In these intangible things I have found the durable situations of life, shame dies, honor perishes, but loving kindness is immortal." Several years ago I saw a monument in France erected to Louis Pasteur which had on it a brief inscription in French which has always seemed to me one of the most impressive and accurate inscriptions upon the practice of medicine which I have ever read. It may be translated freely "To cure sometimes, to relieve often, to comfort always"—*A. L. Miller, M.D., president, Nebraska State Med Assn*

DOCTORS WORK LIKE DETECTIVES

The competent doctor works like a detective, and his extensive cross-examination of the patient is one of his most important means of finding clues to proper diagnosis. Dr. Peter J. Steincrohn, Hartford, Connecticut, maintains in the June issue of *Hygeia, The Health Magazine*.

"The mind of the good diagnostician is soon cluttered with clues of all sizes, shapes, and colors which he must literally drag out of you with questions," he says. "Then he must sort these out and through a process of exclusion (gained by long clinical experience) be able to throw many out the window of his consciousness. To make a diagnosis and be fairly certain about it, the complete cross examination of the patient is absolutely essential."

"Sometimes physical examination yields absolutely nothing. The positive signs of disease may not rear their heads until valuable months have slipped by. But symptoms often come early to warn against illness."

The patient, therefore, should be glad if he has a doctor who spends a great deal of time in asking questions.

Jefferson County

Almost totally blind Dr Gilbert A Foote, of Dexter, one of the county's oldest physicians has retired from the active practice of medicine after a medical career of nearly fifty-three years, more than fifty of them in Dexter.

The veteran physician has lost total vision in the right eye and has only little vision in the left eye. Because of his poor eyesight, Dr Foote decided to retire. He is 81 years old and will continue to act as health officer of the town and village, a position he has held for forty-five years. Dr M R Harwood has taken over his private practice.

Kings County

Dr Robert Kingman, Brooklyn neurologist and instructor in neuropsychiatry at Long Island College Hospital Medical School, died suddenly on August 7 of a heart attack in his home at 62 Montague Street. He was 64. Formerly the secretary and treasurer of the Brooklyn Neurological Society, Dr Kingman was at the time of his death visiting neurologist at various borough hospitals including Kings County Hospital, Greenpoint Hospital, and the Polhemus Memorial Clinic. He also was the author of many scientific papers on neurology and wrote a series of popular articles on this subject for the *Brooklyn Eagle* during 1929 and 1930.

Monroe County

Forty thousand residents of rural Monroe County had free public health nursing service for the first time, starting September 3, when the State Health Department inaugurated a year-long nursing demonstration.

Eligible for the service will be twelve rural towns. Others of the county's nineteen towns already employ their own public health nurses, with the cost assessed against their taxpayers. To be assigned for duty in the nurseless towns, a majority of whom have filed requests for coverage are five specially trained State Health Department nurses, according to Dr Paul A Lembecke, Rochester district state health officer. Organized medicine has pledged cooperation in the state's public health nursing service program.

Complete coverage by public health nurses is the most outstanding health need in the county, said Dr Albert D Kaiser, county medical society president as he expressed the hope that all twelve eligible towns will participate.

Dr Kaiser and Dr Benjamin J Slater chairman of the medical society's public health committee recalled that the society had backed local health officers on the need for public health nurses in every county community.

Both physicians expressed the hope that the proposed nursing demonstration would convince local officials of the need for a permanent service. But they pointed out that this was a question for local determination.

Raymond H Greenman, executive secretary of the Tuberculosis and Health Association pointed out that the need for public health nursing has been under study by committees of the medical society and health association headed respec-

tively, by Dr George E Sanders, Greece health officer, and Dr George S Price, Perinton health officer.

New York County

At the meeting of the Comitia Minora of the Medical Society of the County of New York held June 25, 1940, the president was empowered to appoint a committee of five on Military Preparedness to augment the activities of a similar committee of the Medical Society of the State of New York. At the same time an Advisory or Liaison Committee to work in conjunction with the smaller committee was appointed.

Dr Condict W Cutler, Jr, was appointed the chairman of these committees. The other members are as follows: Dr Chas Gordon Heyd, Dr M A Ramirez, Dr Elise S L'Esperance, Dr B Wallace Hamilton, secretary.

The American Doctors War Relief, formed by New York physicians to aid sick and injured women and children in the warring regions of Europe, has opened headquarters at 18 Gramercy Park South. Portable clinics on automobile trailers will be sent from the United States, one outfit for seven contiguous villages or towns thus giving one day's service at each locality weekly. The American volunteer physicians will occupy two trucks carrying supplies for each clinic. Native nurses will be used. Officers of the committee in charge are Drs Clarence R Straatsma, chairman, Thomas H Russell, first vice-chairman, Walter D Ludlam, Jr, second vice-chairman, E Forrest Merrill, executive secretary, V Burt treasurer, C J B Harris corresponding secretary.

Otsego County

Dr Floyd Jerome Atwell, obstetrician at the Mary Imogene Bassett Hospital since 1922 died in Cooperstown on August 24 of an embolism after an appendicitis operation. His age was 55.

Dr Atwell was born in Cooperstown September 9 1884, the son of Frank W and Carrie B Shaul Atwell. He received his M D degree at Albany Medical College after an internship at Samaritan Hospital, Troy, New York, and began medical practice in Cooperstown in 1908.

He served overseas in the World War and was discharged as a captain of the Twenty-third Engineers. Dr Atwell was secretary of the Otsego County Medical Society. He was a member of the Masonic Lodge the Republican county committee, and served as a town and village health officer and high school physician. He leaves a widow, the former Miss Helen Williams Murdock, two sons Robert W deputy county clerk, Otsego County and Sherman W, and a daughter, Janet L, all of Cooperstown. His mother, a sister and a brother also survive.

Putnam County

The practicing physicians of Cold Spring issued a joint statement on August 22 announcing standardized medical fees that have been established for the entire county by the Putnam County Medical Society, says a report in the *Cold Spring Recorder*. The local physicians Dr Coryell Clark, Dr Ralph M Hall and Dr William J Cowan will make a charge of not less than two dollars for office calls and not less than

childhood, frequent colds, earaches, and especially one who has had discharging ears at any time from any cause whatsoever should have an

otologic examination as soon as possible and periodic retests to discover subsequent impairment of hearing

County News

Chautauqua County

The village of Falconer, adjoining the city of Jamestown in Chautauqua County, recently dedicated its new sewer system and sewage treatment plant. The completion of this project corrects several unsanitary conditions resulting from the overflow and unsatisfactory functioning of many private sewage disposal installations formerly used in the community.

The sewer system comprises over 12 miles of sanitary sewers serving the entire village. The treatment plant, designed for an ultimate population of 5,000, consists in general of a comminutor, mechanically equipped settling tank, separate sludge digestion tank, glass covered sludge-drying beds, and an effluent pumping station for use during high stages in Cassadaga Creek, into which the effluent of the plant normally discharges by gravity.

The entire project was constructed with W P A aid at a total cost of about \$500,000.

Dr Henry G Morris, of Lakewood, who died on August 20, at the age of 44, was a member of the third generation of a family of physicians, and son of the late Dr James W Morris, of Jamestown. He was a former president of the Jamestown Medical Society.

Chemung County

Creation of the post of county supervising physician was proposed to the Chemung County Board of Supervisors by its Welfare Committee on August 12.

A resolution to set up the proposed "county medical plan," sponsored by George F Cassidy, committee chairman, was tabled to give board members the opportunity to study the plan.

Miss Rosemary Antin, of Binghamton, state medical worker, described the plan as one by which the county could lower welfare medical costs by reducing sums paid in physicians' fees and by cutting drug costs and hospital expenses.

By the plan, a physician, probably nominated by the Chemung County Medical Society and appointed by the Board, would serve as "contact agent" between the medical profession and the county welfare department. He would investigate welfare medical cases to eliminate needless treatments and hospitalization.

At present, she said, there is no person on the welfare department's staff with the medical training to examine patients to determine the need for continuing treatments or hospitalization. The county supervising physician would cooperate with the medical profession, she said, to cut the costs of medical services by ending the treatment or by providing lower cost service.

The plan would include drafting a manual of prices for treatments, drugs, and hospitalization. The supervising physician would approve all bills for welfare medical services when submitted according to the schedule, she said, facilitating the payment of bills and their approval by the State Welfare Department to permit reimbursement.

Erie County

A meeting of the recently formed Western New York Surgical Association was held on August 8 at the Niagara Falls Country Club, at which time the officers were elected.

The purpose of the Association, as outlined in the constitution adopted, is the "cultivation, promotion, and diffusion of knowledge of the art and science of surgery in its various departments, to sponsor and maintain the highest standard of practice in Western New York, to hold professional and social meetings, and to publish transactions."

Plans are now being formulated for a meeting late in the fall.

The chairman of the Committee on Education of the county society reports that it is the desire of his committee to send to every member of the society a pamphlet on the "Principles of Professional Conduct" as published by the State Society. This is to be financed by the Erie County Medical Society.

The chairman announces that several complaints have been received of newspaper publicity of members. This is to be referred to the Board of Censors. "It does not pay to advertise"—*Louise W Beamis, M D, Secretary*

Fulton County

The city of Gloversville has completed a modern filtration plant, built in part with funds allocated by P W A. The total cost was approximately \$300,000.

The treatment works consist of aerator, equipment for adding lime, alum, and activated carbon to the water flowing from the impounding reservoirs, mixing and sedimentation basins, six filter beds, and a covered, filtered water reservoir having a capacity of 3,000,000 gallons. The filtered water is again treated with lime for corrosion prevention and is disinfected with chlorine and ammonia as it flows from the plant to the distribution system of the city. The plant has a capacity of 6,000,000 gallons per day.

The completion of this filtration plant enables the city to deliver to its citizens clear, attractive water of safe sanitary quality that is not corrosive to the distribution system and plumbing fixtures.

Genesee County

Dr E G Rabby, president of the Genesee County Medical Society, has announced the appointment of three physicians to a committee to cooperate with the state and national societies in coordinating medical men and facilities in case of a war emergency.

Dr Peter J DiNatale, secretary of the county medical society, is chairman of the committee. His aides are Dr Ward B Manchester and Dr I A Cole, of Batavia.

Questionnaires are soon to be sent by the state organization to every physician in the county and when filled out are to be returned to Dr DiNatale.

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MAX LEDERER

three dollars for house calls. The fee for calls outside the village of Cold Spring will be proportionately more, depending upon the distance.

Despite the rise in the cost of living, drugs, and surgical materials, there has been no corresponding rise in the cost of medical care, the statement points out. For some time Cold Spring has enjoyed the lowest medical fee schedule in New York State, according to the physicians.

St Lawrence County

The St Lawrence County Medical Society held its third summer social meeting on August 15 at the Gouverneur Country Club. Luncheon was served at 1 P M. The staff of the VanDuzee Hospital was host at golf, cards, and other entertainment.

An explosive outbreak of septic sore throat involving thirty-five persons, chiefly adults, has been reported in the village of Waddington, St Lawrence County.

When the first cases came to the attention of Dr Charles Evans, local health officer, on July 27, he recognized the possibility of an outbreak and reported them promptly to the district state health officer who began investigation immediately. Dates of onset extended back to July 24. All of those affected were patrons of one raw milk dairy. On the first day of investigation, July 27, the raw milk supply was discontinued and pasteurized milk was substituted.

The milker on the dairy in question gave a history of tonsillitis with onset shortly before the outbreak. The State Department of Health veterinarian was unable to discover in the cows any mastitis caused by hemolytic streptococci which belong to the group commonly encountered in human infections. He did, however, find two cases of bovine mastitis. Samples of milk from each of these two cows as well as throat cultures from the patients were taken for bacteriologic examination.

Wayne County

The August meeting of the Wayne County Medical Society was held August 13 at the Sodus Bay Heights Country Club. The Doctors' wives and families attended the meeting, and there was a sports program, with golf and bridge tournaments in the afternoon. This was followed before supper by a treasure hunt.

About fifty doctors and their wives attended the meeting, which honored Dr John F Myers' completion of over fifty years in the practice of medicine. Dr Myers was born in the town of

Sodus, and his whole practicing life in medicine has been spent in this locality. About 1900 he founded a hospital at Sodus. He has been a member of the Wayne County Medical Society for fifty years. A presentation speech was made by his son, Dr Linwood Myers, and he was given a set of travel books by the society.

After the dinner the doctors held a business meeting and elected Dr John Root, of Clyde, and Dr David Ennis, of Lyons, to membership.

There then followed a discussion on "Medical Military Preparedness" and the president of the society, Dr Charles Steyaert, appointed a Military Preparedness Committee consisting of Dr Edwin Baumgartner, Dr James Davis, and Dr Linwood Myers to act for the society. This committee will work in cooperation with a similar committee of the State Society.—Reported by James L Davis, M.D., Secretary.

Westchester County

Registration of all registered nurses in the county is being sought by the special committee on military preparedness of the nursing division of the Westchester Council of Social Agencies.

It is the hope of the committee to be in position to give helpful advice and suggestions to individual nurses in the county and to aid the county medical society in obtaining the type of nursing service most suited and one which will fit the preference of the individual nurse.

Dr Harold M Hays, a physician specializing in diseases of the ear, nose, and throat, writer on medical subjects, and a leader in organizations for the assistance of the hard of hearing, died of a heart attack at his home in Scarsdale on August 21. His age was 59.

Dr Hays was the author of a number of books and more than one hundred monographs on the diseases in which he specialized. He also was the inventor of the pharyngoscope in 1909 and the complex oscillator for improving hearing.

He was formerly president and director of the American Federation of Organizations for the Hard of Hearing and founder, president, and director of the New York League for the Hard of Hearing.

The Westchester Cancer Committee, Bronxville, has prepared a book designed to inform boys and girls of high-school age about cancer. "The little book, attractively printed and illustrated, can be read easily in thirty minutes, and it provides in brief, condensed form all the essential information about cancer," says the J A M A.

Deaths of New York State Physicians

Name	Age	Medical School	Date of Death	Residence
Louis Bleier	59	Hahne Chicago	July 15	Manhattan
Arthur L Chambers	52	N Y Hom	August 15	Manhattan
Leopold Freiburger	72	Univ & Bell	June 2	Manhattan
Harold Hays	60	P & S N Y	August 20	Manhattan
Arthur J O'Leary	72	N Y Univ	July 27	Bronx
Charles L Randall	73	Buffalo	July 27	Salamanca
John C Shoudy	71	Syracuse	August 4	Syracuse

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MAX LEDERER

Nomenclature and Criteria for Diagnosis of Diseases of the Heart. By the Criteria Committee of the New York Heart Association. Fourth edition. Octavo of 282 pages, illustrated. New York, New York Heart Association, 1939. Cloth.

The new edition of this little book contains changes and additions that are of great importance to those interested in cardiology. To the diagnostic classification has been added a brief "therapeutic classification," so that a patient's record will contain not only a complete cardiac diagnosis but keyed directions as to the degree of limitation of activity indicated. This should be of value to nurses or others responsible for the actual care of the patients.

Some diagnoses have been modified as to terminology in order to conform with the terms used in the *Standard Classified Nomenclature of Disease*. The code numbers utilized to signify diagnoses as used in this work have been added. The most important addition in this new edition consists of an appendix presenting an outline for pathologic diagnosis. Under the chairmanship of Dr. C. E. de la Chapelle, a subcommittee, with the help and advice of a group of authoritative pathologists, has prepared a systematic outline of criteria for classifying pathologic data in relation to the heart. It is hoped that the wide use of this outline will do much to standardize the nomenclature of this aspect of cardiology.

TASKER HOWARD

Diseases of the Foot. By Emil D. W. Hauser, M.D. Octavo of 472 pages, illustrated. Philadelphia, W. B. Saunders Co., 1939. Cloth, \$6.00.

Every phase of the subject of foot diseases is covered by this text. Chapters on anatomy, embryology, and physiology of the foot are excellently described and are followed by practical information on various foot disorders, which are based on the author's extensive experience.

Conservative as well as surgical measures are analyzed, and the preferred methods of treatment are described, including the author's own procedure for correcting hallux valgus deformity.

Innumerable practical suggestions are offered in the treatment of foot disorders, making this volume suitable for the general practitioner as well as the orthopedist. Special chapters are devoted to fractures about the ankle, muscle rupture, postural disturbances, diseases and trauma of the feet, circulatory diseases, and arthroses.

HENRY P. LANGE

The Dysenteric Disorders. The Diagnosis and Treatment of Dysentery, Sprue, Colitis and Other Diarrhoeas in General Practice. By Philip Manson-Bahr, M.D. Octavo of 613 pages, illustrated. Baltimore, Williams & Wilkins Co., 1939. Cloth \$8.00.

Much knowledge concerning the dysenteric diseases has been accumulating in the current literature of the world in the past decade. This information needed to be gathered within one volume for ready access, and no one could be better fitted for the work by reputation, experience, and progressive thinking in this field than Philip Manson-Bahr.

The discussion of tropical dysenteries, amebiasis, and bacillary dysentery particularly is exhaustive and complete and includes much of

the author's original work. The subject of ulcerative colitis is brought up to date with a complete résumé of all that has been written on this disease. Some carelessness in the accuracy of names in the references quoted is noticeable.

Tropical sprue is differentiated from non-tropical sprue, contrary to the ideas of Thaysen, and it is suggested that the tropical variety is due to some specific virus.

The description of mucous colitis is interestingly written as is that of polyposis and diverticulitis.

This is an authoritative reference book on diarrheal diseases, and the appendix contains a wealth of information on laboratory method in connection with the diagnosis of the dysenteries, which should be invaluable to the worker in this field.

HENRY F. KRAMER

The Diagnosis and Treatment of Diseases of the Esophagus. By Porter P. Vinson, M.D. Octavo of 224 pages, illustrated. Springfield, Charles C. Thomas, 1940. Cloth, \$4.00.

This book is a clear-cut, logical, and informative treatise. Its sixteen chapters are devoid of the superfluous matter that so frequently clutters up medical publications. General practitioners and all those especially interested in esophageal disease will find it a storehouse of reliable information and a ready reference work.

The contents of this volume are especially valuable because they represent the ideas of the foremost authority in this field. The chapters on general management of patients suffering from difficulty in swallowing, stricture of the esophagus, and cardiospasm are particularly noteworthy.

The publisher, as well as the author, is to be congratulated on the high quality and general arrangement of the book.

MERVIN C. MYERSON

Electrocardiographic Patterns. Their Diagnostic and Clinical Significance. By Arlie R. Barnes, M.D. Quarto of 195 pages, illustrated. Springfield, Charles C. Thomas, 1940. Cloth, \$5.00.

This volume discusses fully the typical electrocardiographic changes that are found in myocardial infarction, left and right ventricular strain, and pericarditis. There is also a discussion of the electrocardiogram in some other diseases and a brief consideration of precordial leads. It is only in recent years that these typical patterns have been recognized, and the author has admirably presented the subject by means of many electrocardiograms and the discussion in the text. The important literature on each phase has also been reviewed. It is unfortunate that about the time the book was going to press a change in the manner of connecting the precordial lead was recommended, so that most of the illustrations of this lead show deflections in the opposite direction to those now in use. The author recognizes this, but it should offer little difficulty to those familiar with the subject. The book is beautifully illustrated, and the tracings bring out well the desired points. It can be highly recommended to all those interested in heart disease.

J. HAMILTON

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Editorial

Postgraduate Medical Education

The war, the campaign of preparedness just beginning, and the future necessity for filling the places in civil practice of those men who will be withdrawn for military service lend added importance to the District Branch Meetings some of which have already occurred and others of which will shortly take place all over the state. There is a real danger that in the turmoil associated with the profound changes now occurring in our national life the ordinary problems of civil practice may be slighted. A casual study of the varied programs of the District Branch Meetings of the Society dispels this apprehension at once.

Present postgraduate medical activities in various centers, as for instance, the International Medical Assembly of North America of which we publish the program in this issue (see page 1474), emphasize the fact that the United States is now the medical center of the world. While this Association is in session in Cleveland, Ohio, the Graduate Fortnight of the New York Academy of Medicine will be held in New York, October 14 to 25 (see page 1472). The subject of this year's Fortnight is infections and will be a carefully integrated program of panel discussions, clinics, clinical demonstrations, evening addresses, and appropriate exhibits.

The peculiar value of the District Branch Meetings of the Medical Society of the State of New York lies in the fact that these meetings tend to minimize the unbalance between the rural and the urban portions of the state. This aspect of the State Society's educational program is of the greatest practical value for the continuous education of the physician, be he general practitioner or specialist. Its worth may be estimated by comparison with the recent final Report of the Commission on Graduate Medical Education, which seemingly would completely dominate the education, training, standards, and methods of practice of those in the profession from sixteen to

sixty In view of these aspirations, noble in motive, of the Commission, it is comforting to know that under the auspices of the State Society a practical modality for liberal graduate instruction exists throughout the state for the 25 per cent of practitioners who are conceded by the Commission to be interested This instruction is under the direction and guidance of men who have no delusions of grandeur and who still believe in the intellectual freedom and rights of the individual, at least as an ideal

The Unmade Beds

Public health and welfare programs in the recent vinegar-soaked past have fallen into the category of things thought of, but not through They are the unmade beds in the flophouse of opportunism, of which the rumpled sheets bear the imprint of the shoes of physicians, public health officers, welfare officials, and politicians As a result, our civil housekeeping is not in order at a time of national necessity New and urgent problems in public health and welfare must shortly arise to find us with the old ones still on our hands unsolved Why? Are the problems insoluble or the elements irreconcilable? We think not Any other conclusion is untenable, for it would mean that solutions of a sort would have to be compelled by government It is time that whatever of arrogance, or misunderstanding, or confusion of purpose has obstructed in the past should be cast aside

It is in this spirit, we think, that a proposal for an "American" health program has been made by Dr Donald B Armstrong and Dr W P Shepard in the September issue of the *Journal* of the A P H A It is based on five points and is well balanced from the point of view of all the interests involved medical, public welfare, and public health

- 1 A thoroughgoing public health and preventive medical program, including education as well as practical services
- 2 Maintenance of a high standard of private medical services, ample funds for research
- 3 Voluntary prepayment insurance plans to cover hospital costs, medical costs, cash indemnity against wage loss, and combinations of the three adapted to local needs, traditions, and choices
- 4 Combinations of adequate public health services, a better implemented private medical practice, and, perhaps in some areas, hospitals and other facilities supported by local funds or by federal or state subsidy
- 5 State subsidy for indigents and unemployed, continuation of medical relief under the supervision of the medical profession

We cannot urge too strongly upon the responsible leadership in the fields involved consideration of the proposed program and as

rapid ordering as possible of the present ramshackle public health and public welfare structure and housekeeping

Has Medicine a Personality?

Public contact with medicine is largely with the individual practitioner. It is a relationship principally of one person with another. Rarely is a patient conscious, as he talks to or is treated by his physician, of the institution, the corporate body of medicine, that vast complex of schools, thinkers, research workers, clinical experimenters, physicists, writers, scientific associations, libraries, hospitals, and publications, and the large company of respectable people—his associates—who have produced him, accumulated the knowledge which he uses, trained his hands, and ordered his study and whose services are always at his disposition. It was not always so. For centuries the individual practitioner stood nearly alone, with few books and fewer communications. He represented in his community all the medical knowledge there was. People thought him a learned man, and he did not deny it. He was medicine Himself.

In the collective economy which grew up around him, he still remained an individual treating individual patients. But as the self-effacing institution of medicine grew behind him quietly and slowly, great collective institutions grew around his patient more rapidly: government, public health, social welfare, consumer's collectives, education, business, industry. To the management of these large government and business combines, the doctor's patient is merely a customer or a voter—the physician, a potential hired man—and the corporate body of medicine, a utility or a wraith according to the point of view. As these institutions grew, they acquired a definite corporate personality, defined and colored by their public acts and by the exuberant boisterousness, the clangor, of their publicity. But not medicine. It remained a corporative ghost behind the personality of the individual practicing physician, a shadow land of quiet humanitarian effort in a vital, raucous world, touching persons intimately, but not events of a kind commonly comprehended by the man on the street.

The net result of this development seems to be that there is little or no consciousness in the public mind of the personality of corporate medicine—no consciousness that it exists as a dynamically beneficent protectorate of the public medical interest. When this corporate personality is brought to public attention by large groups through the ordinary channels of lay communications, it is usually for a definite purpose. Thus, the character of organized medicine is rarely represented to the public as a positive one by those who

know what kind of personality it is but as a negative and sometimes sinister ectoplasm, defined and delineated for the patient and the public by those who would, for their own purposes, hamstring or destroy it. Is there any reason why the real dynamic personality of medicine should not be introduced to the people, or has it a personality? How would *you* portray it? Where is there a monument symbolizing it? A painting? To what can the public point saying "That is medicine?"

Oral Pollen Therapy

Last year we commented editorially on the use of oral pollens in the treatment of seasonal vasomotor rhinitis. We stated that "oral pollen therapy for hay fever should be deferred until further experimentation now in progress had been reported."¹ Such a report is now available in the pooled investigations of three large allergy clinics attached to grade A medical colleges.² In brief, they all concur in the opinion that this form of therapy is of minor effectiveness in the control of seasonal allergy and that the results are definitely inferior to those obtained by parenteral injection.

Several other factors are to be noted in this report. Besides its apparent inability to ward off or greatly moderate an attack of hay fever, except in a few instances, oral pollen therapy is attended by unpleasant and untoward reactions. These are gastrointestinal in nature and consist of abdominal cramps, nausea,

vomiting, and diarrhea, sometimes of such severity as to cause the patient to refuse further treatment. Another significant and somewhat surprising observation is that in the patient group given a placebo instead of the pollen, by mouth, 21.9 per cent stated that they were improved. While, as the authors indicate, caution is needed in interpreting these results, they nevertheless serve to contradict to a considerable degree the favorable reports on this method of desensitization.

On the basis of this work we are still of the opinion that this means of therapy should be confined as yet to the large clinics for further experimentation in dosage and a comparison of results obtained over a period of years, since it is well known that the severity of pollen disease varies in different years. For the individual sufferer, parenteral injections offer the surest way to obtain relief from hay fever. The practicing physician should not subject him to a form of therapy that is still the subject of controversy.

¹ New York State J Med 29: 1171 (June 15) 1939.
² Feinberg S. M., et al. J. A.M.A. 115: 23 (July 6) 1940.

Primary Carcinoma of the Lung

A great deal of statistical data has been presented in the recent literature that tends to indicate that primary carcinoma of the lung is on the increase. That this increase is not only apparent but real is proved by a review of the Yale autopsy protocols from 1917 to 1937 according to Rosahn.¹ In the first ten years of this period the incidence of primary carcinoma was 7.35 per cent, whereas in the second decade it had increased to 11.04 per cent.

While it was the fifth most frequent tumor in the first period of his survey, it subsequently attained second place, and it alone of all growths showed a significant positive rising trend.

Peery,² on the other hand, maintains that all statistics on the increase of primary cancer of the lung are misleading. He states that many of the diagnoses made are not justifiable and that the proper inclusion of other tumors, such as

¹ Rosahn P. D. Arch. Path. 29: 649 (May) 1940.

² Peery T. M. Arch. Path. 29: 625 (May) 1940.

endothelioma of the pleura and tumor of the superior pulmonary sulcus under the classification of primary carcinoma of the lung, has added materially to the putative increase of cases in this group. These and other factors have augmented the statistics rather than the real incidence of the disease. Rosahn, however, after analyzing all factors alluded to by many in their attempt to prove that the rise is only relative, is certain that the increase in primary cancer of the lung as found in the autopsy material of the New Haven Hospital is a real one which can be demonstrated for the general population.

There is probably some truth on both

sides of this question. One thing is certain, however—namely, that statistics from isolated sources on a disease of universal importance are of value only insofar as they paint the local picture. This can be seen from the wide variances in the vital statistics of the several health departments. It is only when these are correlated for the whole population that a true picture may be obtained. A question as important as this can only be answered satisfactorily by a carefully conceived, nation-wide plan of research which takes all factors into consideration. Inferences, while provocative, are not conclusive.

Hemorrhagic Disease of the Newborn

The finding of a specific remedy for the cure of hypoprothrombinemia haemorrhagica neonatorum furnishes yet another sparkling example of the efficacy of unhampered and nonregimented medicine in removing the ever-present threats to life during infancy. It is a classic representation of the efforts of individuals, freely reported, finally summarized for practical use by others equally interested.¹

Dam's² isolation of the antihemorrhagic factor, vitamin K, was shortly followed by the proof that the prothrombin level in the blood of normal infants was appreciably lower than that existing in adults,³ and that this deficiency occurred between the second and sixth days after birth. Since the time of onset for the hemorrhagic manifestations of this disease is between twenty-four and ninety-six hours, Waddell, Guerry, Bray, and Kelly,¹ correlating the work which had preceded their clinical experimentation, reported success in the treatment of hemorrhagic

disease of the newborn by the use of vitamin K. The accumulating literature on the ability of this vitamin to control blood prothrombin in obstructive jaundice and hepatic disease gave weight to these observations. However, since the specificity of vitamin K for this affliction was first presented in 1939, little time has elapsed for overwhelming corroborative evidence, and it is for this reason that the report of Poncher and Kato,⁴ wherein this form of therapy was successfully employed in 22 cases, is of extreme importance to all physicians who minister to the newborn.

In all their cases, regardless of where hemorrhage became manifest, the prothrombin time was reduced to normal within forty-eight hours after treatment with vitamin K was started. Of greater moment was the fact that clinical improvement was equally prompt in appearance and remained permanent. The method of administration varied in each instance, but all routes—oral, intramuscular, and subcutaneous—yielded similar favorable results.

⁴ Poncher H. G., and Kato, K. J.A.M.A. 115 14 (July 6) 1940

¹ Waddell W. W., Jr. Guerry DuP. 111 Bray W. E. and Kelly O. R. Proc. Soc. Exper. Biol. & Med. 40 432 (1939)

² Dam H. Biochem. Ztschr. 215 475 (1929)

³ Brinkhouse K. M. Smith H. P., and Warner E. D. Am. J. Med. Sc. 193 475 (1937)

Advances in Anesthesia

As little as fifteen years ago, the majority of patients who were operated upon were anesthetized by ether, with or with-

out nitrous oxide and oxygen in addition. Today, the rapid strides made both in new anesthetic agents and methods of

administration have produced a complete change

According to studies made at the Mayo Clinic,¹ regional block and intravenous anesthesia have become so favored that they account for almost 80 per cent of the patients treated by selective methods. The former, while effective in abdominal block, has yet to give satisfactory results in brachial plexus anesthesia. Surgical narcosis with intravenous anesthesia is excellent in cystoscopic operations and in minor gynecologic work and is also used for certain dental and ophthalmologic operations. Intratracheal anesthesia is

¹ Lundy, J S Tuohy E B Adams R C Mousel L H, and Sheldon T H Proc. Mayo Clinic 15 241 (April) 1940

valuable in operations about the head or where there is evidence of laryngospasm

While the use of cyclopropane has increased, Lundy and his co-workers feel that it should not be used where another non explosive agent would serve equally well. It is best applied in chest surgery and in pericardiectomy, since it provides adequate oxygenation while the respirations remain shallow.

The advantages of these newer agents and more precise means of administering them have increased the amount of relaxation obtainable and thus shortened the time of operation, also the after-effects are not as marked or distressing as those following the open drop method.

Correspondence

CITY OF NEW YORK
OFFICE OF THE MAYOR

September 17, 1940

Medical Society of the State of New York

Gentlemen

You may have read in the newspapers that on August 29th I and my entire staff were registered and fingerprinted at the World's Fair City Hall. Of course, this was not done under the Federal statute, for that law applies to aliens only, and is compulsory. New York City is conducting its own campaign for the registration and fingerprinting of *citizens* and the City is doing this on a wholly voluntary basis.

There is nothing new about it. We have maintained a civilian identification file for a long time. We are pressing the drive today because everybody is so much aware of fingerprinting, and because the experience of refugees in war-torn Europe has demonstrated so vividly how useful this means of identification can be.

That is all fingerprinting is—a means of identification, the most accurate and scientific we have. It differs from the recording of a signature only in its greater accuracy. There is nothing degrading or humiliating about it. Several million citizens of the United States are already recorded through this voluntary means of identification.

As Police Commissioner Lewis J. Valentine points out in the accompanying report, our civilian file is maintained apart from the criminal records, and is not referred to at all in connection with crime or criminals. It is of no assistance to the police from that standpoint. I hope that you will study the Commissioner's report. It shows very clearly the advantages that accrue from voluntary registration, and the many cases in which civilian fingerprints are being recorded.

The City is most anxious to be helpful in this capacity. I have made arrangements so that if any association, club, or other group of ten or more is desirous of filing identifications, and notifies my office or the Department of Health, giving the time and place where fingerprinting is desired, a City fingerprint expert will be sent there for that purpose. I hope that you will avail yourselves of that opportunity.

Your association may decide to hold an "identification party." On the other hand, you may wish to arrange for registration at a regularly scheduled luncheon, dinner, or meeting. We will be very glad to furnish souvenirs at all such occasions, the same being a copy of the individual's fingerprints as they will appear in the civilian identification file. Please let us know as soon as you can so that a convenient date can be arranged.

Sincerely yours,
F. LA GUARDIA, Mayor

To the Editor

I appreciate deeply the kind words of the Editor in the August 1st issue of the State Journal in referring to my little article on the "Five Day Treatment for Syphilis." Apparently this article met a need, as it has been reprinted in a good many periodicals here and abroad.

However, the Editor gave the American Social Hygiene Association more credit than was due in suggesting that the Association "supervised the clinical work" of the Intravenous Drip Treat-

ment Project. As a representative of the Association I served merely as a member of the Committee which supervised the clinical work, but was only one of several members and certainly not the most important.

Yours sincerely,
WALTER CLARKE, M D
Executive Director

The American Social Hygiene Association, Inc.
August 23, 1940

THE DIAGNOSIS OF SERIOUS UROLOGIC CONDITIONS

HUGH H. YOUNG, M D, Baltimore

(From the James Buchanan Brady Urological Institute, Johns Hopkins Hospital)

Tuberculosis of the Urogenital Tract

Early diagnosis is important. A study of our collected cases of tuberculosis of the kidney shows that the most prominent symptoms are associated with micturition, frequency and irritation being the most conspicuous. In these cases the finding of white and red blood cells in the urine, in the absence of common bacteria, is at once suggestive of tuberculosis. An x-ray will rule out calculus. Very careful urinary studies supplemented by guinea-pig inoculations will often show that the case is tuberculous. Urograms, both intravenous and retrograde, will often make it possible to detect early tuberculous lesions in the kidney by filling defects, and comparison of the urines obtained from the two kidneys by catheterization and functional tests will often clinch the diagnosis.

As to treatment, there is only one thing to do and that is a nephro-ureterectomy as soon as possible. Medical treatment should not be countenanced.

In some cases the seminal tract is also involved, and the first symptom may be an enlargement or induration of an epididymis. Rectal examination will often disclose involvement of one or of both seminal vesicles and the prostate (Fig 1).

My statistics show that radical surgical attack upon these deep-seated tuberculous involvements offers a far better chance of cure than simple epididymectomy. In almost one-third of our cases we have removed one kidney that was found to be involved as well as the seminal tract.

The presence of pulmonary tuberculosis need not contraindicate operation. As Kocher pointed out years ago the only hope of curing these complicated cases of

pulmonary tuberculosis is to remove all external foci that can be attacked surgically.

Prostatic Obstruction

This may come on so insidiously and present symptoms so confusing that early diagnosis may be difficult. I have known patients who had no frequency or difficulty of urination, and yet a large amount of residual urine was present. One such patient's only complaint was that his belly was getting progressively bigger. We found 1,200 cc residual urine. In such cases nausea and other symptoms of uremia may be the first symptoms and indicate back pressure that has led to progressive impairment of the kidneys. The prostate may show little or no change. In cases of contracture of the vesical orifice or median bar obstructions, there may be no enlargement, but there is usually some induration in the upper median portion found on rectal examination. The passage of a rubber catheter will usually detect obstruction and find residual urine. The phthalein test with an indwelling catheter may show renal impairment. If this is associated with increase in the blood urea, operative intervention is usually indicated. With a cystoscope the character of the obstructive enlargements, the presence of trabeculation, cellules, diverticula, hypertrophy of the trigon, etc., will be demonstrated and make clear the type of operative intervention indicated.

If on rectal examination a portion of the prostate is of great induration, carcinoma should be suspected (Fig 2), even if there is only a very small nodule in the posterior lobe. If x-ray shows that this is not due to a calculus exposure of the prostate through the perineum, inspection and palpation of the indurated area

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According to studies made at the Mayo Clinic,¹ regional block and intravenous anesthesia have become so favored that they account for almost 80 per cent of the patients treated by selective methods. The former, while effective in abdominal block, has yet to give satisfactory results in brachial plexus anesthesia. Surgical narcosis with intravenous anesthesia is excellent in cystoscopic operations and in minor gynecologic work and is also used for certain dental and ophthalmologic operations. Intratracheal anesthesia is

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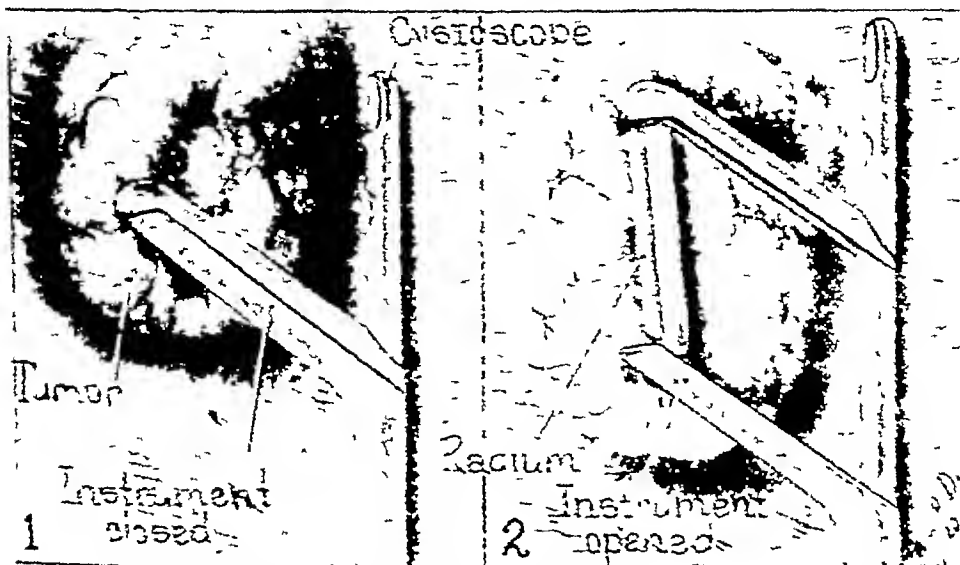


FIG. 4. Young's cystoscopic radium applicator No. 2 (parallelogram instrument) is being used in a case of malignant papilloma of right lateral wall of bladder.

Bladder Tumors

Hematuria is often the only symptom. It sometimes occurs infrequently even when a papilloma of considerable size is present. Patients should be warned that the passage of blood in the urine should be reported to a physician. He should not rest content until he is sure that it is neither associated with tumors of the bladder, ureter, kidney, or prostate, nor with tuberculosis or calculus. When vesical neoplasms become large or multiple, marked urinary symptoms usually supervene. The benign character of bladder tumor can usually be made out by simple cystoscopic inspection. Markedly villous papillary tumors with slender pedicles usually are benign, but a biopsy obtained by cystoscopy is usually desirable. Where the tumor is not villous but more globular and with an irregular strawberry-like surface, even though markedly papillomatous, malignancy is usually present. The ulcerative and invasive types of bladder tumors are recognizable at once as carcinoma. A study of our cases shows that in a very large percentage of the cases the base of the bladder is the region involved. By far the greatest number are found in or about the orifices of the ureters or the urethra. Pap-

illary tumors of the bladder are fortunately curable by cystoscopic methods in a large percentage of the cases. By fulguration or resection with the high-frequency current, the intravesically projecting tumor can be readily destroyed but even where the tumor has been found microscopically to be benign it is very important to make applications of radium to the base and adjacent portions of the bladder. With my cystoscopic radium applicators of several types, tumors in all portions of the bladder can easily be reached (Fig. 4). In a long series of cases we have shown that even malignant papillomas or papillary carcinomas may be radically cured by this combination of electric and radium treatment through the cystoscope. Occasionally, one sees a papillary tumor in the bladder projecting from a ureter or a diverticulum. Urograms and ureter catheterizations will usually give a prompt diagnosis. Radical treatment is indicated in all of these cases.

Diverticula of the bladder may be congenital and produce no symptoms until they become sufficiently large to cause obstruction to urination or to the outflow of urine from the ureters. The congenital types are usually found either at the

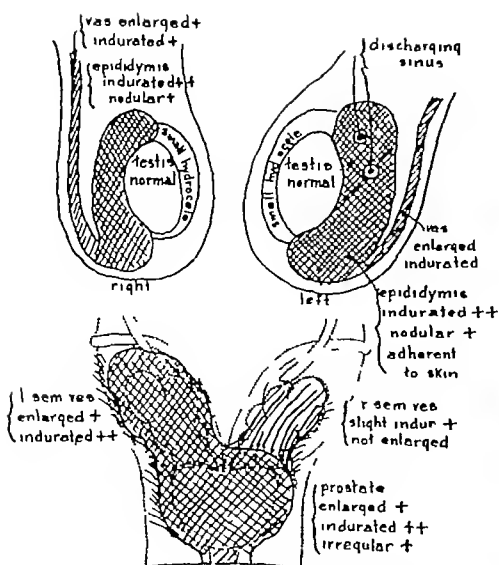


FIG 1 Tuberculosis of prostate and left seminal vesicle, both epididymides and vasa Radical operation carried out BUI 8486



FIG 2 Rectal chart showing a small, isolated, very hard nodule in upper portion of right lobe

and, if necessary, excision and microscopic examination may be desirable. The fact that carcinoma of the prostate is shown to be greatly on the increase and that it is present in probably 14 per cent of all men past 60 years of age should put the medical profession on the alert to examine elderly men and be suspicious of hard areas in the prostate.

By our radical operation in which the entire prostate is removed with its capsule, the neck of the bladder, and both seminal vesicles, it has been shown that cures may be obtained in about 50 per cent of the cases followed from five to twenty-five years after hospitalization.

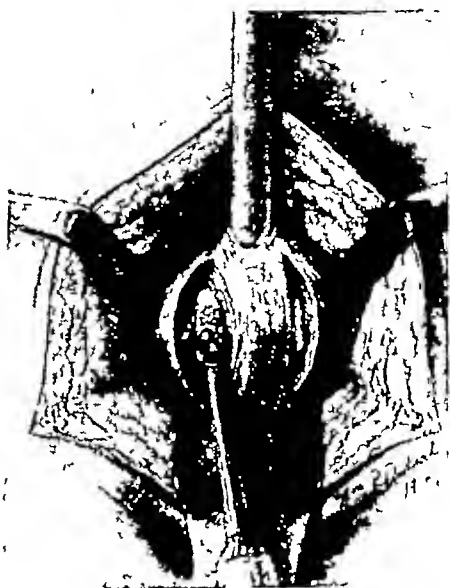


FIG 3 After lateral capsular incisions have been made, calculi which are found in stratum between lateral, hypertrophied lobes and posterior portion of prostate are removed BUI 10564

Calculi may develop in the prostate insidiously and produce no symptoms. Not infrequently scores of stones varying in size may be present and produce only slight irritation. If there is no history of previous gonorrhea or a urinary infection, the presence of pus cells in the urine or secretion obtained by prostatic massage should lead one to suspect prostatic calculi. The examining finger often detects no irregularity, no areas of marked induration, and no crepitus, but the x-ray may show the prostate filled with calculi. Through the perineum a conservative operation to remove them may easily be carried out (Fig 3).

Calculi of the urinary tract usually reveal their presence by pain, hematuria, or pyuria as well as other symptoms. Tumors of the kidney and ureter may present the same symptomatology, and efforts to make an early positive diagnosis should be made. The whole gamut of urologic diagnostic procedures may be necessary to arrive at an accurate diagnosis and to determine just what should be done in an operative way.

Hypertension Due to Unilateral Renal Disease

This is one of the most recent and interesting advancements in urology. Goldblatt showed by clips which partially occluded a renal artery that hypertension could be produced. The removal of the clip or the kidney cured the hypertension. He attributed the increase in blood pressure to the release of pressor substances from the kidney into the blood. The first positive demonstration of the soundness of his dicta was shown by 2 cases from our clinic which were reported simultaneously by Boyd and Lewis and by Leadbetter and Burkland. In both of these cases thrombosis of the renal artery greatly impairing the vascularity of one kidney was discovered, and nephrectomy did away with the hypertension. In the presence of high blood pressure an exhaustive comparative study of the two kidneys is often indicated. In a recent case I discovered a functionless right kidney due to impacted stones at the ureteropelvic juncture. The blood pressure was 253/120. Removal of the kidney revealed a cluster of stones in the lower portion. The pelvis of the kidney was reduced in size, and the blood vessels showed marked impairment. After removal of the kidney the blood pressure promptly dropped to normal. These cases and others at our clinic indicate that much can probably be accomplished in certain cases of severe hypertension by careful renal investigation and operation. The whole question is one of the most interesting in the recent development of urology.

Tumors and Hyperplasia of the Adrenal Cortex

These are of great interest to urologists and endocrinologists. A unilateral tumor of the adrenal cortex (Fig 5) may lead to rapid virilism, growth of hair, atrophy of the breasts, cessation of menses, and development of the clitoris into a penis-like organ. In the presence of these symptoms very careful studies should be made. Not infrequently the tumor can be

palpated. By the injection of air low down within the perirenal fascia (Gerota), the outline of the neoplasm can often be made out by x-ray films. Urine and blood hormonal studies may also be of diagnostic value. Bilateral hyperplasia is most often congenital. At birth these females may be pronounced male from the fact that the clitoris is greatly enlarged and no vagina is visible. As they grow up they fail to develop breasts, hair appears in abundance on the body and face, menstruation does not come on, and the sexual desires are usually directed toward females. In these cases the embryonic prostate of the female, instead of disappearing, grows apace and may be almost as large as the normal male. Sexual intercourse as males is often quite normal, ejaculation occurring from the prostatic glands, although the verumontanum, ejaculatory ducts, and seminal vesicles are present only in the rudimentary form of the wolffian structures. We have published a series of these remarkable and often very tragic cases.^{1,2} Surgery offers the only hope for these poor creatures. By plastic operations we have been able to bring down the concealed vagina to its proper position in the perineum and then have amputated the enlarged clitoris. At a single operation both adrenals have been exposed simultaneously by a special technic and either resected on both sides or one whole adrenal removed. The latter procedure seems to furnish the best results. At last some hope is offered for the relief of these distressing abnormalities.

Congenital Valves of the Prostatic Urethra

For years this condition was discovered only at autopsy. In 1912 I discovered 2 cases on instrumental examination and operated to remove the valves for the first time. At birth, the ureters and kidneys are often dilated, and their function is impaired so greatly that the children frequently die of uremia. Through their emaciated muscles the outline of enlarged kidneys and ureters may be seen and palpated. The bladders are almost always

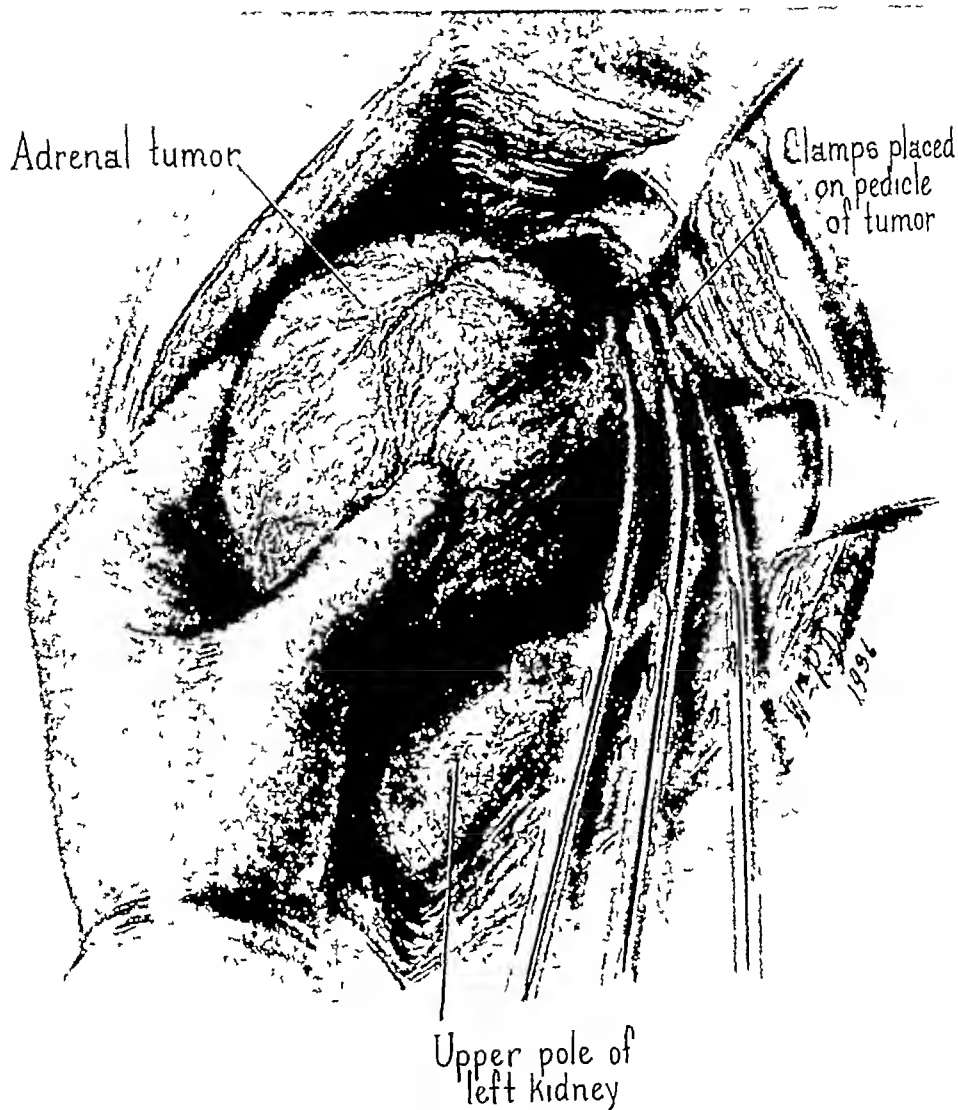


FIG 5 Tumor of left adrenal has been brought out through an incision, the blood vessels supplying it have been clamped before dividing and ligating

vertex where the urachus connects with the bladder or where the ureters pass through the bladder wall. At these three points of anatomic weakness, diverticula may develop either in childhood or later in life when obstructive conditions at the vesical orifice have come on. Not infrequently a diverticulum may draw the ureteral orifice into its sac and eventually cause marked destruction of the kidney. In cases of obscure vesical symptoms a urogram may disclose the presence of

diverticula that can usually be seen with the cystoscope and sometimes explored. The obstructive condition at the vesical orifice demands operative relief. In many cases diverticula may become greatly reduced in size after operations on the prostate and may cause no trouble. In other cases they persist as pouches that may harbor infection, prevent sterilization of the urine, and continue to cause damage to the ureters. Appropriate surgical treatment is then indicated.

Symposium on Carcinoma of the Genitourinary Tract

TREATMENT OF EPITHELIAL TUMORS OF THE BLADDER WITH RADIATION

ARCHIE L. DEAN, M D , and JOHN BALFOUR, M D , New York City

(From the Department of Urology, Memorial Hospital)

PATIENTS with bladder tumors may present a great variety of clinical pictures which often are exceedingly difficult to interpret. Nevertheless, the character and extent of the disease in the bladder, the condition of the upper urinary tract, and the strength of the patient as a whole must be learned before one can make an intelligent choice of appropriate treatment. The primary tumors may vary from apparently insignificant excrescences composed of well-differentiated cells in an orderly arrangement to extensive, anaplastic, infiltrating cancers. The upper urinary tract may be normal or reduced in efficiency by obstruction and infection to the lowest degree compatible with life. General resistance may vary between that of a young man with an early bladder lesion and that of an aged person with widespread bladder disease. Pathologic examinations are of but limited help in accurately learning prognosis. Sometimes the pathologist fails because small specimens removed from the periphery of tumors through a cystoscope do not show the true structure of the growth as a whole. More often, however, microscopic examinations are misleading because tumor structure is but one of a number of factors that influence the patient's chance of survival. It is well known that all bladder tumors are potentially malignant because malignant changes frequently have been observed in benign-appearing papillomas. It is also possible for apparently benign tumors to extend beyond the bladder

without any malignant characters becoming demonstrable in the structure of the metastatic growths. Furthermore, it is impossible for the microscope to show the greater danger of multiple tumors or tumors situated so as to obstruct ureteral orifices or the bladder outlet. Finally, an appreciable number of bladder tumors are composed of two or more portions of different degrees of malignancy, a condition seldom shown by the usual cystoscopic biopsy.

The inadequacy of the microscope to show the patient's true condition and some of the other complicating factors associated with tumors of the bladder are mentioned to emphasize two points. 1. After all diagnostic information has been obtained, an estimate of the status of the patient with a bladder tumor can approach accuracy only if it is made on the basis of a broad knowledge of the clinical pathology of the disease. 2. When the natural history of a disease can produce so many variations, the physician who has the largest number of therapeutic agents at his command should be able to give the most effective treatment. There seems to be general recognition of the increased therapeutic resources provided by radiation, because recent reports advocating surgery alone have applied only to selected groups of cases while all recommendations for the general management of bladder tumors have included irradiation. In the treatment of malignant tumors in patients with diminished general resistance, it is a great advantage to

*Read at the Annual Meeting of the Medical Society of the State of New York,
New York City, May 8, 1940*

greatly enlarged, and a catheter meets with an obstruction in the prostate and will not pass into the bladder. The blood urea is high and the renal function poor. With the urethroscope, valves may be seen running from the prostate to the roof and sides of the urethra and between them a tiny slit through which a ureteral catheter may be passed. Gradual decompression, until the uremia has been dissipated and the renal function improved somewhat, should usually be carried out before the valves are destroyed either by fulguration or with my

baby punch. These operations are remarkably successful, and I have recently reported 26 cases without a death. Practitioners should be on the outlook for this rare but extremely fatal condition that can usually be detected at birth or soon afterward and responds so well to appropriate treatment.

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AMERICAN NURSES' ASSOCIATION

A nursing council on national defense was recently organized. The *composition of the Council* consists of representatives of the American Nurses' Association, National League of Nursing Education, National Organization for Public Health Nursing, Association of Collegiate Schools of Nursing, National Association of Colored Graduate Nurses, American Red Cross Nursing Service.

The following groups will be asked to appoint their directors or superintendents to serve on the Council: Army Nurse Corps, Navy Nurse Corps, United States Public Health Service—Nursing Service, Veterans Administration—Nursing Service, Bureau of Indian Affairs—Nursing Service, and others such as the Federal Children's Bureau, etc.

The functions of the Council are

1. To determine the role of nurses and nursing in the program of national defense.
2. To unify all nursing activities which are directly or indirectly related to national defense.
3. To study nursing resources, to plan the most effective use of these nursing resources, to provide for necessary increases, and to set up the machinery which will insure the quickest possible functioning in case of need.
4. To insure the continuance of the high quality of nursing schools and services in order that effective nursing may be maintained in a national emergency.
5. To act as a clearing house regarding nursing and national defense, and to cooperate with other agencies having related activities and functions.

The chairman is Julia C. Stimson, R.N., President, American Nurses' Association, 50 West 50th Street, New York City.

DOCTOR AND UNMARRIED MOTHERS

A too familiar problem of the physician's office is presented by the unwed young woman who wishes an abortion. This situation is discussed with wisdom and tact in the *Illinois Medical Journal* by W. C. Danforth, M.D., chief of the department of obstetrics and gynecology, Evanston Hospital, Evanston, Illinois.

Many young women, he says, feel that the termination of the pregnancy is the easiest way out. It is difficult for some of them to understand why this cannot be done, and in some instances they have been urged to take this course by the man concerned who is quite willing to secure his own release from embarrassment by a procedure all of the risk of which is borne by her.

The physician has a double duty. First he should explain to the young woman that abortion, unless done for the unquestioned purpose of saving life, is an illicit operation and that, therefore, if she persists in having it done, it must be done by an irresponsible practitioner outside the ranks of respectable medicine.

This brings with it an unquestioned risk to her life or health. She should be told that many women who have been aborted and who have apparently recovered without real trouble have been made sterile for the rest of their lives. She should also be made to understand that the commission of another wrong is never a good way to right a wrong already committed and that an abortion, which involves the destruction of a life, is a greater wrong than the original error. It should be made clear to her that the infant, for whose presence in her uterus she is at least in part responsible, deserves fair treatment and that she has no right to deprive it of its life merely to save herself and the man most concerned.

All this takes time, patience, and repeated explanation but it can best be done by the physician, who, if he has a sense of social responsibility, will be glad to help the young woman to a safe, sane, and proper adjustment of her problem.

cancers are too extensive for treatment by other methods, external irradiation may cause such reduction in size as to permit intensive irradiation of the residual tumor with radon seeds. Large sloughing tumors, so often accompanied by marked infection, may be transformed by external irradiation into smaller, cleaner lesions.

It will be noted that these indications for high-voltage therapy closely coincide with the indications for radical surgery on bladder tumors. We believe, however, that the more conservative irradiation methods are suitable to by far the greater number of patients who are in poor general health because of extensive disease.

When external irradiation has been given as a preliminary to some other form of treatment, it is important to make the second attack on the growth at the proper time. Maximal regression usually takes place between two and four months after an intensive course has been completed. If external therapy has caused complete disappearance of tumors, the patient should be closely observed and recurrences treated as they are found. In such cases, the earliest recurrences usually will be located in the region of the bladder neck, possibly because less treatment reaches this area through the pubic bones. The frequency with which treatment can be carried on successfully through the cystoscope after preliminary external irradiation shows the value of the method.

Interstitial irradiation to be successful must completely destroy all tissue within the treated area. This may be accomplished by depositing radon seeds of about 2.0 millicuries each 1 cm apart in the base of a bladder tumor. Fortunately, the bladder tolerates such intense therapy. It will be noted that attempts to destroy bladder tumors by surgical excision and intensive irradiation are similar in principal, but radiation can be applied with much less operative interference.

In suitable cases successful interstitial irradiation can be given through a cystoscope, but restraint must be exercised to keep the procedure within proper limits.

If papillary tumors are no larger than 2.5 cm in diameter and are so situated in the bladder that all parts can be clearly seen, cystoscopic treatments should be successful. Larger papillary tumors and flat infiltrating growths of any size should be treated with the bladder open because, if the growth is large, accurate spacing of the seeds is practically impossible and, if the tumor infiltrates, the submucous extensions cannot be clearly seen through a cystoscope. Since cystostomy greatly facilitates this treatment with little added risk to the patient, we consider the attempt to extend the limits of transurethral irradiation of bladder tumors by using the resectoscope unnecessarily harmful. Removing the bulk of a papillary carcinoma is but a small part of its cure, and using the resectoscope for this purpose, especially in the female bladder, is dangerous. Also, if a large tumor has been resected, it is questionable if the fluid in the bladder will be sufficiently clear to permit accurate distribution of radon seeds.

Implanting radon seeds through a suprapubic opening is a simple operation. The fact that mobilization of the bladder is unnecessary may be a great advantage because, at least theoretically, separating the bladder from its attachments might disseminate tumor emboli through lymphatics and blood vessels. To permit accurate spacing of seeds in the base of a papillary tumor, the projecting portion should be removed. For this purpose a cautery snare is convenient. If the tumor is flat, implantation can be done directly. Using seeds of about 2 millicuries each and placing them 1 cm apart in the form of equilateral triangles, the entire tumor-bearing area should be covered. Unless the growth is too large, a surrounding zone 1 cm wide is treated as well. Seeds are usually inserted to a depth of about 1 cm. Tumors that cover ureteral orifices can be treated in the same way because kidney complications are rare.

Probably the greatest danger in using interstitial radiation arises from insufficient treatment, because this mistake is

have an effective agent that can be applied to the growth with minimal trauma and complete avoidance of extensive surgical operations.

At present there are several practical sources of radiation and an increasingly large number of useful ways of employing them. These, added to surgical methods, provide a wide possible choice of therapy for bladder tumors. Even so, patients frequently die not because efficient therapy does not exist but because treatment for the individual case was ill chosen. For these reasons urologists should study radiation methods and learn the advantages and limitations of the various techniques. In treating bladder tumors, we think it essential that the urologist should prescribe the radiation and observe the patient frequently. He alone is responsible for the patient's welfare, and, since he performed all of the diagnostic procedures, he is most familiar with the patient's condition. Moreover, any complications that may arise during a course of irradiation are soonest recognized and relieved by urologic methods.

Bladder tumors may be treated by two forms of radiation, external and interstitial. The most practical external radiation consists of roentgen rays from 200- or 1,000-kilovolt units and the Chaoul or contact tube. Interstitial irradiation is given by depositing radon seeds in the tumor.

It is difficult to compare the therapeutic values of the 200- and 1,000-kilovolt units because experience with the latter is so limited. Theoretically, the higher voltage radiation should be superior because a greater proportion of the rays that strike the surface of the body penetrate to a considerable depth, thus increasing the tumor dose and at the same time reducing injury to the skin and superficial tissues. Two-hundred-kilovolt radiation, now in common use, is sufficiently powerful to destroy deeply situated tumors, but in locations such as the bladder there is danger of seriously injuring nearby organs as well. This difficulty is not solved by making the apparatus more powerful.

Although the possible advantages of directly applying roentgen radiation to a bladder tumor were long recognized, the procedure was impractical before the Chaoul tube was devised. This produces roentgen rays at the end of a cylinder, 2.5 cm in diameter, suitable for insertion in certain body orifices and the open bladder. A number of tumors have been completely destroyed by giving this contact radiation in fractional doses, but the method is more laborious and probably no more efficient than radon seed implantation. One of us has shown that a computed curative dose can be given by a single exposure with no apparent harm, but more experience is needed before the proper place of this method can be known.

Since high-voltage irradiation furnished by the 200-kilovolt unit is the most practical and commonly available type of external therapy, further discussion will be limited to the use of this agent. It is convenient to use a target skin distance of 70 cm, filtration of $1\frac{1}{2}$ mm of copper and 1 mm of aluminum, and six pelvic portals as large as convenient. If 200 r are given to each of two portals daily, 2,400 r can be given each portal in about six weeks. In patients of average size, this will deliver about 6,000 r or nine threshold erythema doses to the bladder region. Computations by one of us show that nine threshold erythema doses are equivalent to about two-thirds of the dose required to cure a bladder tumor, and this agrees with our clinical observations. Therefore, in prescribing external irradiation, one should realize that supplementary therapy will be necessary. In spite of this deficiency and the fact that such a cycle is a strain for most patients, we believe the method has great value. When the bladder is extensively involved with multiple tumors of a low grade of malignancy, external irradiation may cause their complete disappearance or greatly reduce their number and size. When this stage of regression has been reached, electrocoagulation or interstitial radiation may be given with considerable hope of success. If single infiltrating

THE TREATMENT OF TUMORS OF THE BLADDER BY REFRIGERATION

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IT is universally recognized that temperature has a direct influence on growth in all forms of cellular life, and Dr Temple Fay* has correlated the frequent appearance of metastatic malignancies in those segments of the body with higher surface temperatures¹

In conjunction with the recent experimental studies² made at Temple University Hospital by Dr Temple Fay and Dr Lawrence W Smith* on the effects of refrigeration on tumor tissue in man, it has been my privilege to make certain interesting observations on the response of tumors of the bladder to refrigeration. The fact that tumors in other parts of the body responded favorably to refrigeration led us to believe that tumors of the bladder may also show a favorable response, since the bladder could be opened and the tumor exposed directly to local refrigeration. The observations recorded in this paper were obtained from a study of 4 hopeless terminal cases of carcinoma of the bladder treated by refrigeration. The refrigeration in these 4 cases observed was applied for variable periods, from forty-three to 133 days, at a constant temperature of 40 F. Serial biopsies, taken in all cases studied, governed the extent of refrigeration.

The refrigeration was applied in each of the 4 cases by circulating cold water at 40 F through some type of applicator (Fig 1) applied directly to the tumor growth within the bladder. Many types of applicators were used in an effort to find the most satisfactory. Compressible rubber bulbs in three sizes were used and were found satisfactory since they were soft and flexible and easily adjustable to

the different shapes and contours of the tumors, thereby giving more surface contact and effective refrigeration. On the other hand, rubber being a poor conductor of cold, it was not so effective as the metal applicators. Therefore, metal applicators were used where possible, but in the bladder cases there was a tendency for these to obstruct the ureteral orifice, thus favoring ascending infection and pyelonephrosis which was the cause of death in Cases 1 and 2.

In all the cases the bladder was opened widely by suturing the bladder mucosa to the skin surface, making a semipermanent suprapubic cystostomy. The bladder cavity was found contracted in all cases, and the size and type of applicator had to be changed at frequent intervals to conform to the enlarging cavity due to sloughing tumor tissue.

The urine was drained by a suction pump drain of the Babcock type which was inserted around the applicator and maintained a clean, dry wound.

Case Reports

Case 1—J S, man, aged 62, was admitted on July 10, 1939, to the service of Dr Temple Fay, Temple University Hospital, with a diagnosis of carcinoma of the bladder, grade 3. The onset was in November, 1938, with dysuria and hematuria. Previous treatment had been excision by cautery and extensive irradiation. On admission there was severe pain in the perineum and suprapubic area, relieved only by large doses of opiates. Hematuria was still present, but on examination the general physical condition was good and no external evidence of tumor could be found. The prostate was flat and small, but the lobes were not distinctly definable.

The first treatment in this case was a period of generalized reduced body temperature to 90 F

* Reported on Refrigeration in the Sept 15 issue—Editor

TABLE 1—PAPILLARY CARCINOMA OF THE BLADDER
Results of Radiation Therapy in 50 Consecutive, Proved
Cases Treated Before January 1, 1935

Years of life	0-1	1-2	2-3	3-4	4-5	5-
Survival rate per centum	22	8	6	6	4	54

TABLE 2—INFILTRATING CARCINOMA OF THE BLADDER
Results of Radiation Therapy in 50 Consecutive, Proved
Cases Treated Before January 1, 1935

Years of life	0-1	1-2	2-3	3-4	4-5	5-
Survival rate per centum	52	16	10	2	6	14

followed by a cancer death in every case. Before the bladder is opened, it is often impossible to know the number of seeds required. Therefore, unless an adequate supply is available, some other method should be used. Pain is by no means a regular sequel to the use of even large doses of interstitial radiation. It is more likely to follow treatment near the bladder neck, but control of the tumor usually stops the patient's suffering. We have caused no deaths by local destructive action of an overdose of gold seeds, possibly because more than 75 or 80 millicuries are seldom used. One vesicorectal and three vesicovaginal fistulas have followed our treatments. If these are accidents, they are serious, but, when the structures are infiltrated by cancer, the complication is unavoidable in effecting a cure.

Sixty-three per cent of our patients could have been treated successfully only by extensive operations because the trigon was invaded. In about 35 per cent, excretory urography showed various degrees of kidney damage caused by unilateral or bilateral ureteral occlusion. Practically none of these dilated ureters were suitable for anastomosis to the bowel. The small group of patients who, because of good general resistance, might have survived cutaneous ureterostomy and cystectomy also seemed favorable for radiation methods. Finally, there is a sizable group of patients who cannot survive radical surgery and a number on whom even the most radical surgeons will not operate. To many of these unfortunates, irradiation can provide substantial palliation and to some a cure.

Results

To be of the greatest value, a study of end results must be detailed. Such analysis is impossible in the time available, but 50 consecutive cases of papillary

carcinoma and 50 consecutive cases of infiltrating carcinoma, treated before January 1, 1935, were studied to indicate the survival rate after radiation treatment. Benign papillomas were not considered because many did not require irradiation. All of these tumors are registered in the Bladder Tumor Registry of the American Urological Association. All were of a malignancy classified as grade 2, 3, or 4, and all were treated by radiation methods. It is likely that these patients represent clinical material as unfavorable for any kind of therapy as can be found. With few exceptions they were consecutive applicants to the Memorial Hospital Clinic. Many had recurrent growths after unsuccessful treatment elsewhere.

Since the operative mortality was only 5 per cent, the large number of deaths in the first year indicates how many of these patients have advanced disease with low general resistance. Although 54 per cent of patients with papillary carcinoma and 14 per cent of patients with infiltrating carcinoma were alive five years after treatment began, it is impossible to say how many were cured. The fact that only 14 per cent of patients with infiltrating carcinoma of the bladder lived five years suggests that, after prostatic cancer, this is the most serious disease of the genito-urinary tract. It seems futile to plead for earlier diagnosis because the condition usually is incurable when the first symptom occurs. Little future improvement can be expected from surgery because it is wrong in principle to perform operations of increasing severity as the primary growth enlarges and the patient becomes weaker. Treating bladder tumors with radiation should keep one humble, but hopes for betterment are justified by steady improvement in apparatus and more efficient methods of using it.



FIG 2 CASE 2 Carcinoma of the bladder, undifferentiated cell type, grade 4. Biopsy taken before treatment showing highly undifferentiated cell type of carcinoma. The cells occur for the most part in solid sheets with very delicate connective tissue septate stroma. The nuclei are ovoid to round with prominent nucleoli and a scattering of coarse chromatin granules and some suggestion of papillary arrangements superficially

from the ureters, therefore, the refrigeration was limited and may possibly account for the remaining viable cells

Case 2—S H, man, aged 49, was admitted to the Urological Service of Dr Hershey Thomas, Temple University Hospital, on August 8, 1939, with a diagnosis of carcinoma of the bladder

Onset was two years prior to admission with frequency, dysuria, and hematuria. A wide suprapubic cystostomy disclosed a large fungating and ulcerating tumor mass in the superior lateral wall just posterior to the vesical neck which was reported as undifferentiated cell type carcinoma, grade 4 (Fig 2)

Refrigeration was started on August 25, 1939 at 40 F by a metal applicator applied directly on the tumor mass. The pain was relieved immediately and biopsies taken at ten-day intervals (Fig 3) showed marked degenerative changes. After one month there were no definitely identified tumor cells (Fig 4). Refrigeration had to be discontinued after one month due to the development of pyelonephrosis. Three weeks after refrigeration was discontinued a biopsy showed a recurrence of viable tumor tis-

sue with a few mitotic figures. The refrigeration was resumed, and again the biopsies showed extensive regressive degenerative changes. But refrigeration had to be discontinued after 112 days due to pyelonephrosis, and before all viable tumor cells were destroyed the patient had died in uremia. The autopsy showed no identifiable tumor in the bladder but an extension of tumor outside the bladder along the left ureter. The cause of death was given as pyelonephrosis and terminal bronchopneumonia.

This case like Case 1 shows the serious complication of ascending infection that necessitates the removal of refrigeration applicator, therefore, adequate refrigeration cannot be given long enough to destroy all viable tumor cells.

Case 3—J N, man, aged 54, was referred by Dr L B Greene to Dr Temple Fay's service at Temple University Hospital on November 16, 1939, with a diagnosis of carcinoma of the bladder, grade 4. Onset was in 1937 with hematuria, and, when first seen by Dr L B Greene, a large papillary carcinoma was found on the posterior wall of the bladder. The treatment prior to admission was fulguration radon implants, and x ray therapy directly through cystostomy

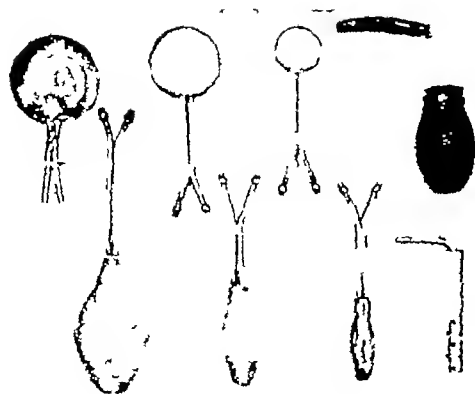


FIG 1 CASE 1 These were some of the metal applicators designed to apply local refrigeration directly to the bladder. The metal sump suction is in the right lower corner.

for twenty-four hours which relieved pain completely for three days. The pain then gradually recurred and became progressively worse, requiring dilaudid $\frac{1}{30}$ grain every two hours for relief.

Dr W E Burnett did a suprapubic cystostomy on July 25, 1939, and found a bladder capacity of only 60 cc. The bladder cavity was almost filled with multiple areas of necrotic ulcerating tumor, involving mostly the anterior and lateral portions of the fundus. The biopsy diagnosis was carcinoma of the bladder, grade 4.

After the suprapubic wound had healed and the sutures had been removed, local refrigeration was started on August 10, 1939, with a small bladeliike metal applicator, with temperature at 58 F which was gradually reduced to 40 F within two days. The second period of generalized reduced body temperature to 90 F was given for four days in combination with the local refrigeration, following which the patient was completely free from pain which never returned again in the bladder except during a five-day interval when the refrigeration apparatus was removed.

A biopsy taken after fourteen days of refrigeration showed extensive disintegration. The bladder cavity was larger and admitted a larger applicator. Much of the tumor tissue was necrotic and sloughing.

The second biopsy, taken after forty days of refrigeration, showed extensive regressive degenerative changes, but small areas of viable cells were found.

After two months of local refrigeration the patient developed elevation of temperature with associated chills and pain across the lumbar region. This kidney involvement failed to re-

spond to chemotherapy, and the patient died in uremia on October 27, 1939.

The autopsy report listed causes of death as follows: extensive renal infection, terminal patchy bronchopneumonia, and toxic myocardium degeneration.

There was a small area of tumor extending into the abdominal wall outside the bladder where refrigeration was not applied. In the bladder there was only a small focal area of regressive tumor at the base of an ulcer.

A total of seventy days of local refrigeration at 40 F and five days of generalized reduced body temperature to 90 F was given.

Discussion—This patient, as is often the case with carcinoma of the bladder, presented a problem of severe pain and had been taking narcotics for several weeks prior to admission. Therefore, periods of generalized reduced body temperature to 90 F were given to relieve the pain and break the opiate addiction. Twenty-four hours of such treatment gave relief for only three days and, finally, a period of four days in combination with local refrigeration at 40 F was necessary to relieve the pain indefinitely. The pain never recurred in the bladder but after three weeks of local refrigeration there was sensation of severe cold and aching pain in the legs and feet which was interpreted as a projection of the cold stimulus applied over the lumbosacral plexus into the peripheral dermatomeres lumbar 5 and sacral 1 and 2.

The tumor had so completely filled the bladder cavity that the first applicator was only a small bladeliike instrument, but after ten days the tumor had sloughed so that an ounce bulb could be used. After forty days of refrigeration only a small crater-like area remained indurated, and biopsies taken from this area continued to show viable cells even after seventy days of refrigeration at 40 F. The continued use of a metal applicator in this case may have completely eradicated this local lesion, since there is greater refrigeration locally and increased depth penetration of cold from 2 to 6 cm.

The ascending kidney infection in this case necessitated the removal of the local refrigeration unit to afford free drainage



FIG 4 CASE 2 Biopsy taken after one month with local refrigeration at 40 F showing necrotic and broken down tissue in which a few large, swollen dead cells can be vaguely visualized and which probably represent tumor tissue. In comparing this biopsy with the preceding specimen, it would appear that the destruction of the tumor has continued in a satisfactory manner

the left had a nephrostomy there was no urinary problem, and refrigeration could be applied directly to the bladder without fear of ascending infection or obstruction of ureters as was the problem in Case 1

Case 4—G M man, aged 51, was referred by Dr Wilbur Hames to Dr Temple Fay's Service at Temple University Hospital on January 31, 1940, with a diagnosis of carcinoma of the bladder, grade 3. The onset was in 1936 with frequency, pain, and hematuria. The previous treatment consisted of excision of the tumor with surgical diathermy and irradiation before and after surgery. He was symptom-free for two years, but pain and hematuria returned and opiates were necessary to control the pain.

The general physical examination was negative except for slight pain to pressure over the bladder, and upon rectal examination the prostate was slightly painful to pressure. Urine was positive for gross blood and albumin. Otherwise, routine laboratory procedures were within normal limits.

The bladder was opened widely with a semi-permanent suprapubic cystostomy and exposed a large diffuse area of ulcerating tumor 4 by 6 cm

involving the right lateral wall above the right ureteral orifice. Biopsy showed a carcinoma of grade 3.

Refrigeration was started on February 9, 1940 at 40 F, which resulted in immediate relief of pain. A biopsy taken after three weeks of refrigeration showed extensive degeneration and necrosis. The bladder cavity had increased in size, and the ulcerative tumor area was almost completely destroyed. The second biopsy taken after six weeks of refrigeration was negative for recognizable tumor cells, therefore, refrigeration was discontinued, and ten days later the biopsy was still negative for tumor tissue.

The suprapubic cystostomy was partially closed, and the patient was discharged symptom-free except for the suprapubic drainage of urine.

The refrigeration at 40 F for forty-three days was through a metal bulb applicator which gave more effective (Fig 5) and deeper penetration of cold. Therefore, the biopsies became negative after a shorter period of refrigeration.

Sulfanilamide, 10 grains three times a day, was given as a prophylactic against kidney infection, and no serious complications arose in this case.

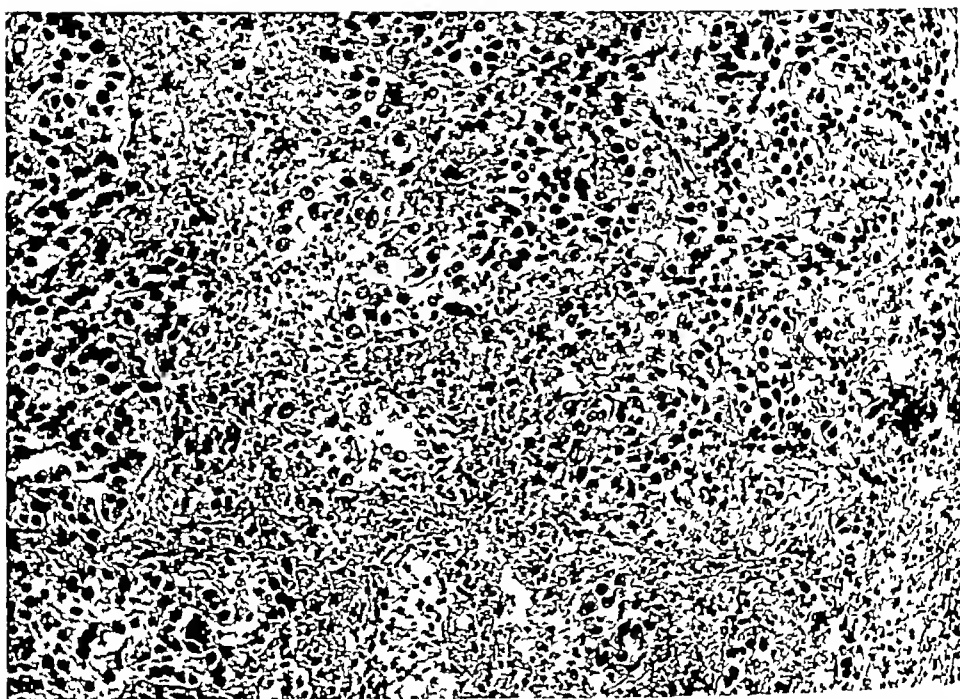


FIG 3 CASE 2 Biopsy taken after ten days of local refrigeration at 40 F showing a still active tumor, but the cells show rather marked degenerative changes. There is haziness to staining quality with indefinite appearance of chromatin and nuclei. Mitoses seem to have disappeared, and no cells can be found in active division.

On admission the general physical condition was fairly good, and no evidence of metastasis was found. He was up and about the ward, but pain in the bladder region required regular small doses of opiates for relief. A suprapubic cystostomy opened into a contracted bladder of small capacity. A rectovesical fistula about $1\frac{1}{4}$ cm was found in the posterior wall of the bladder. The entire bladder wall was a dense, hard, adherent mass of scar tissue, a biopsy of which revealed infiltration of undifferentiated cell carcinoma showing regressive cell changes.

Pyelography demonstrated a nonfunctioning kidney on the right and hydronephrosis on the left. Otherwise, the routine laboratory procedures were all within normal limits.

A left nephrostomy was done on November 28, 1939, before refrigeration was started to prevent the possible ascending infection.

Local refrigeration at 40 F directly on the tumor tissue was started on January 2, 1940, with complete relief of pain, and fifteen days later the hard, dense tissue had become less dense and biopsy showed extensive degeneration and necrosis, both superficial and deep. Dr. L. W. Smith believed this reaction to be a result of both irradiation and refrigeration.

The subsequent biopsies were taken at two and one-half- and four-month intervals after refrigeration was started, and each showed extensive degeneration and necrosis, but neither showed viable tumor cells. Therefore, refrigeration was discontinued on April 15, 1940, after 133 days of continuous refrigeration at 40 F.

There is no gross evidence of tumor tissue in the bladder, and the patient is now under treatment for closure of the rectovesical fistula and suprapubic cystostomy.

These results of negative biopsies obtained in this case may be due to the combined effect of irradiation and refrigeration. Before refrigeration was started, there was evidence of regressive tissue changes, but tumor cells were still viable and found to be infiltrating into the bladder musculature. After two weeks of refrigeration at 40 F there was evidence of extensive degeneration and necrosis even in the deeper layers, and only a few viable cells could be found. It may be concluded that refrigeration has been a definite factor in producing the extensive regressive tissue changes and the complete absence of recognizable tumor cells after four months of refrigeration.

Since the right kidney was nonfunctioning and

GENERAL CONSIDERATIONS IN THE SURGICAL TREATMENT OF CARCINOMA OF THE BLADDER WITH PARTICULAR REFERENCE TO TOTAL CYSTECTOMY

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THE treatment of carcinoma of the bladder is a controversial subject and will undoubtedly remain so for a considerable time. Inasmuch as the choice of therapeutic procedure is dependent on many different factors, most all of which involve a certain degree of personal interpretation for their relative evaluation, it is obvious why there is no uniform opinion regarding the management of this lesion. Among the more important factors that must be considered in each case are the type, grade, extent, and site of the lesion, whether one or both ureterovesical orifices are involved by the growth, the status of renal function, the presence or absence of serious renal infection, and the age and general condition of the patient. Accurate studies of late results are lacking in comprehensive series of cases wherein the efficacy of uniform types of treatment is observed in relationship with these various factors. Until such a time as these studies have been made, our knowledge of the form of treatment ideally suited to a given type of case will be incomplete. At present, certain well-known urologists are ardent supporters of a single form of treatment, perhaps almost to the exclusion of all other forms of treatment, whereas others are equally opposed to this particular type of therapy. This is equally true of radium therapy, roentgen therapy, surgery, and, to a less extent, fulguration. Obviously, all cannot be right. It would appear that the truth lies somewhere in-between these extreme views and that all four forms of treatment have certain definite fields of usefulness which some day will be appreciated more accurately than they are at present.

Choice of Transurethral or Suprapubic Approach

One of the first decisions that must be made in treating a patient who has a vesical neoplasm is in regard to the type of approach to be employed. In many cases transurethral treatment of one type or another may be satisfactory (Table 1).

TABLE 1—INITIAL TYPE OF APPROACH IN THE TREATMENT OF VESICAL NEOPLASM
(443 Consecutive Cases 1935 to 1939 inclusive)

Type of Approach	Cases	Percentage	Mortality Percentage
Transurethral	313	70.7	None
Suprapubic	130	29.3	14.6

In general, the transurethral approach is best employed for the noninfiltrating growth of small or moderate size and of low grade. This form of treatment may also be utilized for pedunculated growths of higher grade or for small recurrent lesions of high grade, perhaps following previous suprapubic treatment. By this approach, electro-excision, fulguration, and implantation of radon can be carried out individually or in combination with one another. Many satisfactory results are obtained in selected cases by these various forms of treatment. Considerable experience is necessary to determine from the local appearance of the growth on cystoscopic examination whether infiltration of the vesical wall has occurred. If an error is made in this regard, there is usually found to be more involvement of the wall of the bladder than was expected. Vesical tumors of high grade sometimes may be likened to an iceberg, as there is a relatively small amount of the lesion visible on the mucosal surface of the bladder and a comparatively large amount lies beneath the surface.

TABLE 1—SUMMARY OF PATIENTS WITH CARCINOMA OF THE BLADDER TREATED BY REFRIGERATION

Case	Age Sex	Biopsy Diagnosis	Treatment	Clinical Observation	Biopsies	Results
J S	62 M	Carcinoma of bladder grade 3	70 days 40 F One 5 day interval without refrigeration Hibernation 5 days	Relief of pain Regression in size of tumor	14 days — regressive changes Subsequent biopsies showed continuous regression	Death pyelonephrosis and uremia
S H	49 M	Undifferentiated cell type of carcinoma grade 4	112 days 40 F One interval of 20 days without refrigeration	Relief of pain Gross sloughing of tumor	Serial biopsies negative after one month Recurrence of tumor after 20-day interval without refrigeration Regression again noted after local refrigeration resumed	Death pyelonephrosis uremia and septicemia
J N	54 M	Carcinoma of bladder grade 4 (rectovesical fistula)	133 days 40 F Continuous refrigeration	Relief of pain No gross evidence of tumor Softening of scar tissue	Serial biopsies negative after 2 1/2 months Constant local refrigeration	Living Being treated for rectovesical fistula
G M	51 M	Carcinoma of bladder grade 3	43 days 40 F (metal applicator)	Relief of pain No gross evidence of tumor	Serial biopsies negative after 6 weeks Constant local refrigeration	Living and well. Suprapubic drainage



FIG 5 CASE 4 This is the method of application of local refrigeration directly to the bladder with the metal bulb and the attached sump drain for urinary secretions

Comment

The 4 cases observed in this study have presented some unusual and dramatic changes. All were cases that had been pronounced hopeless and terminal by competent urologic surgeons, and 3 cases had been previously treated by the usual methods of surgery and irradiation. Biopsies prior to refrigeration in all cases showed active viable carcinoma, and negative biopsies were obtained in 3 of the 4 cases after refrigeration. However, 1 case, three weeks after refrigeration was stopped, showed a recurrence of tumor

tissue, and the other 2 cases have had repeated negative biopsies and are being observed now without refrigeration. It is quite likely that there is extension of tumor beyond the bladder wall, but certainly there is no gross or microscopic evidence of tumor inside the bladder.

If the pyelonephrosis which caused two deaths in these cases can be prevented by the proper technique of application, then it would be possible to give more extensive and, effective refrigeration and, likewise, expect to control the tumor more effectively.

Summary

1 Four terminal cases of carcinoma of the bladder treated by refrigeration are presented.

2 Two cases died of ascending infection resulting in pyelonephrosis, and 2 are still under observation.

3 The living cases each had two negative biopsies.

4 Pain was a major problem in all cases and was controlled by local refrigeration except in Case 1, where a combination of both general and local refrigeration was required.

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2. Smith L. W. and Fay Temple. *J. A. M. A.* 113: 653-660 (Aug. 19) 1939.

lost The various procedures that have been employed in a recent series of consecutive cases at The Mayo Clinic are illustrated in Table 2 A number of different factors influence the surgeon's judgment in selecting the operation of choice.

Segmental resection is reserved preferably for the growth that is situated relatively high in the bladder, perhaps in the posterior wall, in one of the lateral walls, or in the dome of the bladder Occasionally, segmental resection may be employed for lesions situated lower in the bladder, and one of the ureterovesical orifices may be resected and the ureter reimplanted into the bladder either through a stab wound or through the line of closure of the vesical wall The line of resection should be at least 1 to 2 cm beyond the growth in all directions It is a wise plan to have the pathologist make microscopic sections of the wall of the bladder along the line of resection at the time of operation in order to be certain that an adequate cuff of uninvolved tissue surrounding the growth has been removed Electro-excision, fulguration, and implantation of radon are usually reserved for lesions situated in the base of the bladder Excision of all the lesion possible and deep fulguration of the base of the growth usually are preferable to fulguration alone in case there is an infiltrating growth present

Total Cystectomy

I believe that total cystectomy has a definite place in the treatment of carcinoma of the bladder The exact place that it should have, however, remains undetermined at the present time In the past, total cystectomy has not enjoyed a favorable reputation, primarily for two reasons which, it must be admitted, appear adequate to condemn any surgical procedure—namely, an excessive operative risk and unsatisfactory ultimate results On careful analysis, however, it becomes apparent why these reasons for condemning total cystectomy are not necessarily applicable at the present time.

In the first place, improvements in

TABLE 2—INITIAL TYPE OF SUPRAPUBIC TREATMENT FOR VESICAL NEOPLASM
(130 Consecutive Cases 1935 to 1939 Inclusive)

Type of Treatment	Cases	Percentage of Total
Excision with or without fulguration and radium	20	15.4
Fulguration with or without radium	20	15.4
Segmental resection	32	24.6
Total cystectomy	16	12.3
Miscellaneous	42	32.3

preoperative and postoperative care, as well as in anesthesia and surgical technic, combine to make the risk of total cystectomy distinctly lower than it was two or three decades ago It now seems reasonable to believe that total cystectomy can be accomplished with a risk that is comparable to that which exists for the extirpation of a malignant lesion from other abdominal viscera (Table 3) When cutaneous ureterostomy is employed for diversion of the urinary stream, a low mortality may be expected If bilateral ureterosigmoidostomy is performed, the risk will be somewhat higher Removal of the bladder following satisfactory provision for its absence can be accomplished with a reasonable hazard, there being 2 deaths in our last 20 consecutive cases The mortality rate for total cystectomy, as shown in Table 3, includes our earlier cases, and it seems logical to believe that this may be lowered in the future

TABLE 3—MORTALITY OF TOTAL CYSTECTOMY FOR VESICAL NEOPLASM*
(25 Consecutive Cases 1935 to 1939 Inclusive)

Cases	Deaths	Mortality, Percentage
25	7	28

* Total cystectomy planned or accomplished

Let us now consider the second reason that is given for condemning total cystectomy—namely, the poor ultimate results It seems apparent that unsatisfactory final results have been obtained following this operation primarily because it has been used in improper cases and without preliminary abdominal exploration Total cystectomy has been performed frequently, and in fact in most cases, in past years without preliminary abdominal exploration to determine the extent of the lesion Undoubtedly regional and perhaps distant metastatic lesions were

Often the suprapubic approach is best employed for very extensive lesions of low grade, for repeatedly recurring lesions of low grade, for multiple lesions of low grade which occur in a great many areas, and for infiltrating lesions of high grade which still seem to be confined to the bladder. Here again a number of methods of treatment may be employed—namely, excision, fulguration, implantation of radium or radon seeds, segmental resection, total cystectomy, or various combinations of these different forms of treatment. When so many different types of procedures are available for the management of vesical neoplasms, it is apparent that there is a wide choice and ample opportunity for difference of opinion regarding the most desirable form of therapy. In my opinion roentgen therapy alone is best reserved for the treatment of growths that are not amenable to more direct forms of attack.

General Considerations in Suprapubic Treatment

Before proceeding with any suprapubic operation, if this appears to offer the best prospect of cure following careful and complete urologic investigation, the general condition of the patient must be accurately evaluated. Occasionally, the presence of severe systemic disease elsewhere in the body may so limit life expectancy that it is preferable to utilize some form of treatment that has a low immediate risk although it offers less chance of ultimate cure.

If one proceeds with suprapubic operation, the first concern of the surgeon should be to determine the exact extent of the growth. In the large majority of cases abdominal exploration offers the only means by which one can determine with certainty whether an infiltrating vesical carcinoma has extended beyond the wall of the bladder. I do not believe that the importance of this fact can be overemphasized. Recent studies have demonstrated repeatedly that carcinoma of the bladder, particularly the infiltrating type, metastasizes far more often than was previously realized. In general, one

does not attack malignant lesions elsewhere in the body without first determining the presence or absence of local or distant metastatic lesions, and there is no reason why this fundamental surgical principle should be neglected in dealing with carcinoma of the bladder. An extensive suprapubic operation is almost without exception too radical a treatment to be employed only as a palliative measure, which it would be if employed when the growth has invaded distant structures. If the lesion has progressed beyond the bladder and involves regional or distant lymph nodes at the time of exploration, direct suprapubic attack on the bladder is seldom indicated.

At the time of operation, careful intra peritoneal exploration is carried out first. Palpation of the growth reveals its size, degree of fixation, and whether there is involvement of the peritoneum over the posterior or lateral aspects of the bladder. If the lesion appears to be operable from a local point of view, exploration should continue along the iliac lymph nodes on each side of the pelvis up to and including the preaortic nodes. It is very easy to miss a single iliac node, especially in the region of the bifurcation of the iliac vessels, thus, great care must be employed in this region. If no involvement is found in any of these regions of lymphatic drainage, the liver should be palpated. If no metastatic lesions are found, the peritoneum is then closed, and one may proceed with a direct attack on the lesion itself or with ureteral transplantation as a preliminary step to total cystectomy as the case may be. Intraperitoneal exploration can be carried out without adding to the risk of operation if the peritoneum is closed carefully before the bladder is opened.

Choice of Suprapubic Procedure

If one deals with the lesion directly, the main objective is complete removal by segmental resection or total destruction of the growth by some other means. If any of the growth is permitted to remain, "recurrence" is certain to occur, and the best chance to cure the patient has been

is usually employed only when dealing with a grossly diseased ureter that shows considerable ureteritis in addition to great dilatation. This operation is simpler and safer than ureterosigmoidostomy but is not so pleasant for the patient. In this regard, cutaneous ureterostomy is comparable to colostomy.

Total cystectomy may be performed in one, two, or three stages. In years past, the procedure in three stages has been employed most frequently. These stages consist first of right ureterosigmoidostomy, second, left ureterosigmoidostomy, and third, removal of the bladder. This plan of procedure necessitates a prolonged period of hospitalization and three major surgical procedures that are not desirable, particularly for a patient suffering from a malignant process. Probably the preferable plan in most cases is performance of the entire operative procedure in two stages. At the initial stage bilateral ureterosigmoidostomy may be performed, and at the second stage the bladder may be removed. Some surgeons prefer to transplant only the right ureter at the first operation and at the second operation to transplant the left ureter and remove the bladder. At times, when one is dealing with a very extensive carcinoma that has caused some ureteral obstruction, bilateral cutaneous ureterostomy and total cystectomy may be accomplished in one stage with a reasonable risk. If bilateral ureterosigmoidostomy is performed, a total cystectomy in one stage is probably seldom indicated.

Summary

Current opinions regarding the treatment of carcinoma of the bladder are widely divergent and for the most part are based on personal opinion rather than on well-established facts. Transurethral measures appear to be satisfactory for the proper management of many cases of vesical neoplasm, although suprapubic surgical procedures are indicated in other cases. In a limited group of cases, which at present is not too well defined, total cystectomy appears to be the treatment of choice. Complete removal of the blad-

der can be accomplished with a reasonable operative risk, and bilateral ureterosigmoidostomy is entirely compatible with a pleasant and normal life.

Discussion of Symposium on Carcinoma of the Genitourinary Tract

Dr Abraham Hyman, *New York City*—Dr Dean has presented his paper with great clarity and there are only a few points he has mentioned that I wish to dwell upon. He has stressed the importance of determining the condition of the upper urinary tract and in evaluating the strength of the patient as a whole. Therefore, a prerequisite in a study of vesical neoplasm is intravenous urography. So many patients with a bladder carcinoma are debilitated by upper urinary tract infection that this point cannot be stressed sufficiently. There are so many factors to be taken into consideration before deciding on the method of approach in bladder carcinoma—to mention only a few, the age and general condition, whether or not the growth interferes with urinary drainage, whether single or multiple, superficial or infiltrating, etc.

Now, in my opinion, the crux of the entire situation in reference to bladder tumors is whether or not they are of the infiltrating variety. Despite the fact that all tumors of the bladder are potentially malignant, in general the great difficulty does not arise in treating papillomas or papillary carcinoma of the bladder. True an insignificant papillary carcinoma may in time infiltrate or extend very rapidly. From 50 to 60 per cent of these growths are cured by various measures—by interstitial radiation either cystoscopically or by open radiation, fulguration plus radiation or with the resectoscope with or without radiation. Although not brilliant, the results are fairly encouraging. The difficulties and heartaches are with the infiltrating type of carcinoma. Our results with external radiation have been very disappointing. We have had but little experience with the contact radiation (Chaoul tube), but, as Dr Dean says, the method is laborious, painful, and probably no more efficient than radium seed implantation. Interstitial radiation with cystostomy has proved quite satisfactory in small infiltrating lesions. For large infiltrating lesions, especially those involving the neck and ureter orifice region our results have not been satisfactory. We are still of the opinion that cystostomy and partial resection of the bladder with or without ureter reimplantation gives us the best results. Of course the operative mortality is higher than in interstitial radiation with cystostomy but we feel the chances of a cure are enhanced. In a group

present in many of these cases at the time when the bladder was removed. Under such circumstances, satisfactory late results could not possibly be anticipated. For the most part the indication for total cystectomy in the past has been a very high-grade, extensive, often recurrent, carcinoma of the bladder that could not possibly be treated with any reasonable hope of cure by any other means. Obviously, this is the most undesirable type of case and the one in which satisfactory results could hardly be expected from any known method of therapy. It is, likewise, the type of case in which extension to regional lymph nodes undoubtedly had already occurred in a number of instances at the time when operation was performed. It is apparent, therefore, that high operative risk and poor ultimate results of total cystectomy in the past are not justifiable reasons why this operation should be held in disrepute at the present time.

Current conceptions of total cystectomy are not standardized and are dependent largely on personal opinion rather than on well-established facts. I am not at all sure that the right indications for the operation are employed at the present time. It is our current practice to consider the advisability of total cystectomy in four main groups of cases: first, very extensive vesical neoplasms of low grade which are entirely too large to treat satisfactorily by transurethral measures and which, to remove suprapubically, would require destruction of the major portion of the bladder; second, multiple vesical neoplasms of low grade which arise from so many different regions in the bladder that they are quite similar to multiple polyposis of the colon; third, repeatedly recurring lesions of low grade which have failed to respond to less radical forms of treatment, including fulguration and the application of radium; fourth, infiltrating lesions usually of high grade which, to the best of one's knowledge, are still confined to the bladder. There are, of course, exceptions to all of these general classifications. The age and general condition of the patient and

the possible presence of severe systemic disease elsewhere in the body are paramount factors in considering the advisability to total cystectomy.

Diversion of the urinary stream, which is of course a necessary preliminary step to complete removal of the bladder, can be accomplished, as is well known, in one or two general ways—either by diversion of the urinary stream to the skin or into the lower part of the gastrointestinal tract. As far as the comfort of the patient is concerned, ureterosigmoidostomy certainly is preferable to cutaneous ureterostomy. It is only a slight exaggeration to say that there are almost as many techniques described in the literature for performing ureterosigmoidostomy as there are surgeons who have written on this subject; thus, details of technique will not be considered at the present time. The important general principles which every surgeon endeavors to embody in the particular type of operation that he performs include an aseptic type of anastomosis and complete lack of tension, angulation, or obstruction at the site of anastomosis. Some valvelike effect at the uretero-intestinal juncture rather than direct implantation usually is considered important. Catheters may or may not be employed. In our experience bilateral simultaneous extraperitoneal ureterosigmoidostomy, performed with the use of small soft rubber catheters of appropriate size, has been a satisfactory procedure. In all likelihood the details of this operation as performed at the present time may be altered in the future. In general it is best to reserve transplantation into the bowel for the ureter, which is relatively normal. Exceptions are made to this rule, however, and a dilated ureter that does not show evidence of a severe degree of ureteritis can, in many cases, be transplanted into the bowel without excessive risk. It should be emphasized that the patient who has a total removal of the bladder performed in association with bilateral ureterosigmoidostomy may lead an entirely comfortable and normal life. In contrast, transplantation of the ureters to the skin

have so many methods advocated for treatment, one may be sure that none of these is the panacea we have hoped for. No treatment or combination of treatments can offer more than 25 per cent expectancy of five years' remission of the disease, and many of these have recurrences seven to ten years later.

Dr Dean's attitude toward this problem is generally accepted in this community. He makes no general rules for treatment but carefully studies each patient before deciding whether radium, x-ray, surgery, or a combination of these is the treatment of choice. His advice to those who have an insufficient supply of readily available radium not to attempt to use it is pertinent as one often finds that much more is needed than has been anticipated before the operation. No doubt this explains many failures that otherwise might have been treated successfully.

Our Bellevue staff feel that more patients should be given the advantage of early total cystectomy than are now. We also feel that terminal cases are given more comfort and longer life by ureteral skin transplantation alone. Many of these unfortunate patients who have not been successfully treated come to us for the last few months of life. Transplantation of the ureters to the skin has given most gratifying results for relief of pain and prevention of terminal pyelitis. Had radical surgery been used early, some of these might have been saved.

The subject of refrigeration treatment of tumors of the genitourinary tract has attracted my interest for the past year. Artificial hibernation treatment for new growths has been carried out very carefully on 22 patients at the Lenox Hill Hospital during the past nine months. Two were treated for inoperable carcinoma of the prostate and 3 for carcinoma of the urinary bladder. None of these showed any regression of the tumor process, but most showed some temporary relief from pain and required less morphine for periods varying from one to three weeks.

One of the patients suffering from carcinoma of the prostate died from pneumonia immediately after the treatment, and the other, after seven treatments, needed a chordotomy to control his pain.

The results on the 4 patients reported by Dr McCravy using local refrigeration are most interesting and should encourage further investigation. Perhaps a combination of location refrigeration and irradiation will offer a distinct advance in cancer therapy.

I commend this scientific experiment and hope that future modifications may make its use successful. At the present moment I believe that

we should be most cautious in our attitude so that no false hope be given to these unfortunate patients or their families.

Dr John H. Morrissey, *New York City*—The divergence of opinion as expressed in these three papers, embodying as it does three distinct methods of treatment, indicates obviously that carcinoma of the bladder presents a problem to the urologist that is nowhere near a satisfactory solution.

Dr Dean's statistics on one point, however, seem to me very significant. He states that in 65 per cent of the cases in this series the trigon was invaded and that only extensive operation would have been worthy of consideration. In the remaining 35 per cent the various degrees of kidney damage were so extensive that an anastomosis to the bowel would have been impossible.

This immediately suggests two facts with regard to his cases of carcinoma of the bladder: first, early diagnosis was not made, and second, it shows the well-developed idea among those men treating malignancy more or less exclusively—that surgery is and should be a last resort in the treatment of these cases.

In a brief survey of the cases seen at the City Hospital on the service of Dr Kirwin and myself during the past five years—68 in number—all but 3 had had extensive interstitial and external radiation therapy. Most of these cases had been treated privately at the outset. At the City Cancer Hospital, out of 164 cases over 85 per cent had had radiation and, becoming impoverished, had been admitted to city institutions. It seems pertinent, therefore, to point out that unless these carcinoma patients can be given the benefit of improved modern apparatus from the outset then some of the other methods of treatment should be considered. All of these cases survived less than two years after their initial symptoms.

Another angle of this problem is becoming increasingly important due to the generalized use of sulfanilamide therapy in the hands of the general practitioner, who is, after all, the most likely to first come in contact with the case. Seven cases of bladder tumor that I have observed in the last five months had all been under continued treatment for cystitis with sulfanilamide preparations or their derivatives. This drug has thrown the treatment of many conditions, including cystitis, back into the hands of the general man but not without frequently disastrous results. I feel, therefore, that it is more necessary than ever for us to insist upon the importance of gross or microscopic hematuria as a reason for urologic investigation of the

of 67 resections for infiltrating carcinoma, the operative mortality averaged 21 per cent. A follow-up study showed that apparently 30 per cent were cured by partial cystectomy.

What I want to stress is the fact that bladder carcinoma may present so many conflicting factors that have to be taken into consideration that no one method of treatment is applicable to all. We have no standardized form of therapy, and we must try to select the type of treatment best fitted for the tumor and not fit the tumor to just one type of treatment. I believe that there are any number of large infiltrating growths situated at the neck causing obstruction of one or both ureter orifices which cannot be treated with any degree of success by any method short of cystectomy. I believe that, in general, we have been altogether too conservative in our treatment of bladder carcinoma. In my opinion total cystectomy has a distinct field of usefulness in bladder carcinoma. Whereas in the past it has been reserved for extensive advanced lesions, Priestley's suggestion that its field be enlarged to include extensive low-grade carcinoma, which would require for its adequate removal almost complete resection of the bladder by the suprapubic approach, is probably an ideal indication. He also includes as indications for cystectomy recurring low-grade lesions resisting conservative treatment, extensive carcinomatosis, and growths recurring after partial cystectomy. So it appears that the indications for total cystectomy are gradually undergoing a change in recent years.

The routine to be followed in total cystectomy will, of course, vary with the experience of the surgeon. Some prefer cystectomy with skin implantation and others with ureterosigmoid implantation in one, two, or three stages. We have favored cystectomy with cutaneous implantation in two stages because so many of our patients already have infected hydronephrotic kidneys and dilated ureters at the time of cystectomy. In general, if the upper urinary tract is in good condition, ureterosigmoid transplantation with cystectomy in two stages should be the method of choice. It has been implied that with skin implantation the patient cannot lead a normal life. While not as ideal as in ureterosigmoid transplantation, Beer has demonstrated that this is not so and that many of these patients have lived a fairly comfortable life, attending to their daily duties for many years. Of course many contend that total cystectomy with implantation is attended by a high mortality. That is true to a certain extent, but we are dealing with a fatal disease that requires drastic surgery. We have done total cystec-

tomies with cutaneous neostomies in 26 cases with an operative mortality of 21 per cent, but many of these otherwise hopeless cases have survived operation for periods of from five to nine years. Of considerable interest has been the fact that most of the patients who died some years after operation at autopsy showed no signs of local recurrence or distant metastases. Infection of the upper urinary tract was the cause of death in most instances. I feel certain that with more experience total cystectomy should be performed with a much more reasonable operative risk.

Dr Judson B. Gilbert, *Schenectady, New York*—In a critical review of total cystectomy for cancer, Hinman, in December, 1939, reported 25 cases and discussed 254 from the total literature. Since the 1934 committee report of the Bladder Tumor Registry stated that over 75 per cent of bladder cancers involved the ureteral orifices or the vesical sphincters, the great majority of these cases, then, can only have a chance for radical cure by cystectomy. When you consider the serious location of these tumors, heroic attempts might be justified, as the so-called conservative methods have resulted in only about 16 per cent of five-year cures.

Inasmuch as most authors have failed to include the patients for whom only preliminary ureteral transplantation could be done, then the reports to date fail to state the true risk where total cystectomy is planned. In Orr's statistics, 39 surgeons found the regional lymph nodes involved by metastases in 47 per cent of cases at the time of ureteral implantation. The insidiousness and often rapid development of bone metastases, which is reported as being between 29 per cent (Spooner, 1934) and 56 per cent (Colston, 1936), is another obvious reason for surgical failure.

Of the 26,000 cases compiled by Orr in May, 1939, 25 per cent of the patients subjected to total cystectomy died during the first year. If the average mortality rate of 33.2 per cent is added, a total mortality rate of roughly 58 per cent at the end of the first year is obtained. This is no reflection on the surgeons attempting ureteral transplantation and cystectomy as the operation is probably performed after metastases have taken place and serious renal damage has occurred.

Dr William R. Delzell, *New York City*—I wish to compliment our chairman for arranging this symposium on carcinoma of the genitourinary tract, as this is one of the problems that has not been satisfactorily solved. Since we

staff of the hospital has been most cooperative in taking part in these studies, making available the opinion of the many specialists desired from time to time. Both Dr Fay and I have been trying to stress the experimental character of these studies during the past year in presenting this material before many medical societies throughout the country and, by corollary, we have attempted to prevent the idea from gaining momentum that we are dealing primarily with a therapeutic measure and certainly not remotely suggesting the use of refrigeration from the standpoint of a curative procedure.

However, from the regressive changes that have been observed, it does appear that refrigeration will have a useful place as an adjunct to other forms of treatment. In the field of bladder carcinoma where there is such a wide diversity of opinion regarding the relative merits of radiation or surgery, either alone or in combination, it would seem worth while to add this new and fundamental physical agent, irrespective of the

individual opinion regarding the relative merits of the other forms of therapy to the treatment of a disease that has such a tremendous mortality and is associated with such frightful suffering.

Whether refrigeration should be used in early cases or not until late in the course of the disease is a problem that will undoubtedly take a decade to solve. By the very statements that have been made here today, the amount and kind of irradiation, as representing another physical agent, that is optimal for the treatment of bladder carcinoma is still far from settled, and the radiologists have been working with this agent for several decades.

In conclusion, let me reiterate. If refrigeration is used for no other reason than the relief of pain in conjunction with whatever other form of therapy you, as individual urologists, elect, you will find a new weapon in your hands for which, from our experience, your patients will derive more comfort than from any other agent you can use.

INOPPORTUNE

The American Medical Association goes on trial on the charge of violating the Sherman anti-trust law on October 21 in Washington, D. C.

At the same moment, the government which, through one arm has brought a criminal indictment against the officers and two component units of the association, will through another arm be asking and receiving essential aid to the defense of the United States.

The organization and discipline which is regarded as criminal by the justice department will be thankfully and eagerly put to use by the War Department in the selection of the men who will serve in the defense forces, in medical care for armed forces, and in maintaining services for the civilian population.

If the usual procedure is followed, officers of the American Medical Association will be required to remain in Washington for the duration of the trial, a period that may run into weeks and months. At the same time, they will be forced to exert every effort at long range, to assemble and tabulate the enormous amount of information about the medical men of the country that was asked of them by the Surgeon General of the Army at the New York meeting.

The burden placed upon them at this critical time will seem the more indefensible to casual observers in view of the fantastic nature of the charges against which they are now called upon to defend themselves.—*Minnesota Medicine*, Sept., 1940

GENERAL ROTATING INTERNSHIP

Six places on the staff will be filled on the general service—three to begin July 1, 1941, and three to begin January 1, 1942—for two years rotating service in General Surgery, Urology, Proctology, Gynecology, Eye, Ear, Nose and Throat, Orthopedic Surgery, Medicine Pediatrics, Neurology, Dermatology, Pathology and Bacteriology, Radiology, Physical Therapy, Obstetrics (affiliated) at the Hospital for Joint Diseases.

Registration must be made before November 5, 1940, examination date Sunday, November 10, 1940, at 9 00 A. M., at the Hospital for Joint Diseases.

The hospital provides maintenance and uniforms. The Hospital for Joint Diseases has the approval of the American Medical Association for general internships and residencies. It occupies a block facing Madison Avenue, New York City. It is a modern hospital with a capacity of 355 beds for acute diseases. About 6,000 patients are treated annually and one-half of that number are general surgical, medical, pediatric, eye, ear, nose, and throat patients. All services are active. The Out-Patient Department treats about 800 patients daily. The hospital has a Country Branch with accommodations for 60 patients.

Graduating students and graduates (unmarried men) of Class A medical schools are eligible. Applications should be addressed to Director, Hospital for Joint Diseases, 1919 Madison Avenue, New York, N. Y.

PAMPHLETS—HEART DISEASE

Two pamphlets recently issued by the American Heart Association are "Examination of the Heart" and "Standardization of Blood Pressure Readings." The latter is the result of careful study of the problem by joint committees ap-

pointed by the American Heart Association and the Cardiac Society of Great Britain and Ireland. Leading medical schools and all of the outstanding insurance companies are adopting this method as a standard procedure.

source, for, as Dr Dean points out, we are dealing here with one of the two most serious diseases of the urinary tract. Herein lies the cause of delay in correct diagnosis.

I have seen Dr Priestley's film several times and enjoyed it again this morning. I assure you that the operation looks easier and less bloodless than it actually is. Then there is a tremendous hurdle to be overcome in asking a patient to part with a normal physiologic function, aside from the additional difficulty of explaining to him, satisfactorily, why you are asking him to make this decision. However, as the successes are dramatic and satisfying so are the failures depressing and discouraging, and radiation therapy is often a great relief to the surgeon treating the patient. Yet Dr Walter's success with a similar procedure in a large series of bladder exstrophy and the experience of numerous other operators bring this operation more within the scope of our practice.

Cystectomy and ureteral transplantation resemble other urologic procedures in that success comes with increasing operative skill, and to only a few will there be the opportunity of handling a sufficiently large series of cases where the element of operative technic becomes of lessened importance. It may be likely that some drug in the sulfanilamide series will soon control upper tract infection to a degree where a large number of cases are suitable for this procedure.

My feeling is that combination methods of tumor removal with interstitial radiation has almost succeeded in providing adequate treatment excepting in extensive infiltrating growth of the trigon. In these cases I think that diversion of the urinary stream should be considered earlier and more frequently before depending on the result of deep x-ray therapy either directly into the open bladder or externally.

The feeling that surgery is a lost art in the handling of vesical neoplasms seems, to me, most unfortunate, and I do not think that we should resign ourselves entirely to the helplessness of the situation, especially when the statistics as to two- to three-year cures under radiation are no more encouraging than at present.

Dr Lawrence W. Smith, Philadelphia—I want to express my appreciation to Dr Heslin for the privilege of discussing this most interesting symposium on bladder tumors. It is a subject in which I have long been interested, and I have had occasion to study a good many of the cases that have been submitted to the Tumor Registry of the American Urologic Society at the Army Medical Museum. I have discussed these

further with Dr Ash, the curator, and, in his analysis of somewhat over 3,000 cases, the results of treatment, whether surgical or by irradiation in some form or other, have been so disappointing that it seems any new procedure that may be of value in the treatment of such a discouraging group of tumors needs no apology.

I am particularly glad to have had Dr McCravey given the opportunity of presenting these 4 cases of bladder carcinoma before your Society for discussion. Dr McCravey, as our associate in this work, has perhaps better first hand knowledge of the actual problems clinically, hour by hour, than either Dr Fay or myself. I believe he has demonstrated the value of refrigeration locally in these 4 cases both from the standpoint of the relief of pain and also with respect to the regressive cell changes that have taken place.

Perhaps a word at this time is not out of place in reviewing briefly for you the background of Dr Fay's and my studies in this field. In answer to Dr Morrissey's comment that in view of the demonstrable changes and the promising results that have occurred in these 4 cases it was unfortunate the cases were not of an earlier and more hopeful type, I would like to comment that this entire study has been in the nature of biophysical research, and we have not been primarily concerned with treatment. We have purposely accepted only terminal cases of malignancy, insisting only that there must be at least a six weeks' to three months' estimated survival period in order that the cell changes could be observed through serial biopsy studies and subsequently at autopsy. If from these fundamental studies of the effect of temperature upon cell activity a method that is applicable as an adjunct in the present treatment of cancer should become possible, then we naturally shall be most happy. In our own work, however, the cases have been selected on a therapeutic basis only in respect to the relief of pain, and in the entire series of cases, now numbering well over a hundred, there have been only 2 instances in which relatively prolonged periods of relief from pain could not be obtained either by local, general, or combined forms of applied cold. Beyond this it has been possible to eliminate the use of narcotics, many of the patients having been admitted on a daily dosage of as much as 3 to 8 grains of morphine.

Realizing the experimental nature of this study no medical service charge has been made to any patient. The only expense that they have had to meet has been in respect to hospitalization when they could afford it. The entire

staff of the hospital has been most cooperative in taking part in these studies, making available the opinion of the many specialists desired from time to time. Both Dr Fay and I have been trying to stress the experimental character of these studies during the past year in presenting this material before many medical societies throughout the country and by corollary, we have attempted to prevent the idea from gaining momentum that we are dealing primarily with a therapeutic measure and certainly not remotely suggesting the use of refrigeration from the standpoint of a curative procedure.

However, from the regressive changes that have been observed, it does appear that refrigeration will have a useful place as an adjunct to other forms of treatment. In the field of bladder carcinoma where there is such a wide diversity of opinion regarding the relative merits of radiation or surgery, either alone or in combination, it would seem worth while to add this new and fundamental physical agent, irrespective of the

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The organization and discipline which is regarded as criminal by the justice department will be thankfully and eagerly put to use by the War Department in the selection of the men who will serve in the defense forces, in medical care for armed forces, and in maintaining services for the civilian population.

If the usual procedure is followed, officers of the American Medical Association will be required to remain in Washington for the duration of the trial, a period that may run into weeks and months. At the same time, they will be forced to exert every effort at long range, to assemble and tabulate the enormous amount of information about the medical men of the country that was asked of them by the Surgeon General of the Army at the New York meeting.

The burden placed upon them at this critical time will seem the more indefensible to casual observers in view of the fantastic nature of the charges against which they are now called upon to defend themselves.—*Minnesota Medicine*, Sept., 1940

GENERAL ROTATING INTERNSHIP

Six places on the staff will be filled on the general service—three to begin July 1, 1941, and three to begin January 1, 1942—for two years rotating service in General Surgery, Urology, Proctology, Gynecology, Eye, Ear, Nose and Throat, Orthopedic Surgery, Medicine Pediatrics, Neurology, Dermatology, Pathology and Bacteriology, Radiology, Physical Therapy, Obstetrics (affiliated) at the Hospital for Joint Diseases.

Registration must be made before November 5, 1940, examination date Sunday, November 10, 1940, at 9 00 A. M., at the Hospital for Joint Diseases.

The hospital provides maintenance and uniforms. The Hospital for Joint Diseases has the approval of the American Medical Association for general internships and residencies. It occupies a block facing Madison Avenue, New York City. It is a modern hospital with a capacity of 355 beds for acute diseases. About 6 000 patients are treated annually and one-half of that number are general surgical, medical, pediatric, eye, ear, nose, and throat patients. All services are active. The Out-Patient Department treats about 800 patients daily. The hospital has a Country Branch with accommodations for 60 patients.

Graduating students and graduates (unmarried men) of Class A medical schools are eligible. Applications should be addressed to Director, Hospital for Joint Diseases, 1919 Madison Avenue, New York, N. Y.

PAMPHLETS—HEART DISEASE

Two pamphlets recently issued by the American Heart Association are "Examination of the Heart" and "Standardization of Blood Pressure Readings." The latter is the result of careful study of the problem by joint committees ap-

pointed by the American Heart Association and the Cardiac Society of Great Britain and Ireland. Leading medical schools and all of the outstanding insurance companies are adopting this method as a standard procedure.

THE ADMINISTRATION OF SULFAPYRIDINE AND ITS CONGENERS IN PNEUMONIAS*

JESSE G M BULLOWA, M D, HERMAN D RATISH, ARNOLD DAVIDSON, M D, and CONSTANCE LEBAIR, New York City

(From the Medical Service, Harlem Hospital, Department of Hospitals, and the Littauer Pneumonia Research Fund of New York University College of Medicine)

THE value of sulfapyridine in the treatment of bacterial infections, especially the pneumococcic and streptococcic pneumonias, has been amply demonstrated. The fact that we see recovery in patients with low concentrations of sulfapyridine in the blood has often been misinterpreted as indicating that the concentration of sulfapyridine was not of importance in the treatment of these infections and that there was no one range of concentration more desirable than another, and, moreover, it has not been sufficiently recognized that under some conditions low concentrations may be ineffective. Such a failure is illustrated in the patient shown in Chart 1, where a bacteremia was not checked when only 1.7 mg % of sulfapyridine was present in the blood.

In explants of bone marrow,¹ it was observed that bacteriostasis and the bactericidal action of sulfapyridine was influenced by a number of factors: the concentration of sulfapyridine to which bacteria are exposed, the duration of exposure, the strain of organisms, the number of organisms, and the previous experience of the organisms in respect to the drug, as well as the auxiliary action of specific antibodies. It was also shown that most of the pneumococci might be destroyed but a few might survive for a longer time and later multiply. Our presentation concerns the conditions under which sulfapyridine favorably affects the infections by damaging the invading bacteria without damage to the patient's

tissues and the conditions for obtaining a satisfactory concentration.

Concentration

Anyone working with sulfapyridine is immediately struck by the unpredictability of the concentration obtained in the blood when sulfapyridine is orally administered. This does not seem to be a function of the mass of the patient, because when the dose was related to the weight there was no correlation. Nor is it related to the size of the dose, because increasing the dose even two- or three-fold may not be associated with an augmented concentration of the drug in the blood. This is shown in the patient where 2 Gm. every four hours gave concentrations of only 2.5 mg % (illustrated in Chart 2). Accordingly, reliance must be placed on measurement of achievement rather than on prediction if a high concentration of this drug is desired. On this account we devised a bedside method (a modification of Marshall's) for determining sulfapyridine concentrations. Our method depends on the extraction of the sulfapyridine from the blood with ether.²

Certain factors that influence concentration are known. From the experiments of Marshall and Litchfield on dogs,³ we learn that the main absorption is from the intestine and that there is greater absorption when sodium sulfapyridine is administered than after sulfapyridine. Sulfapyridine is soluble in water to the extent of one part per two thousand. It forms both a hydrochloride, which is very soluble, deliquescent, and unstable, and a sodium monohydrate, which is also very soluble, much more stable, and

* These studies received financial support from the Littauer Pneumonia Research Fund, the Metropolitan Life Insurance Company and from Mr. Bernard M. Baruch, Mr. Bernard M. Baruch, Jr., Miss Belle N. Baruch and Mrs. H. Robert Samstag.

does not deliquesce. Solution or very fine suspension is an obvious requirement for absorption, but, when the sulfapyridine was given in suspension or in tablets, we observed no marked difference.

In order to study the optimal dosage, observations were made on the concentration of free and acetyl sulfapyridine

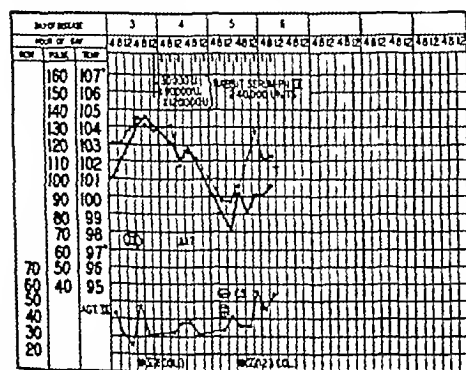


CHART 1 A 60-year old man had *Pneumococcus* type IX in the sputum but *Pneumococcus* type V in the blood. For the *Pneumococcus* type IX he was given rabbit serum, and his temperature fell to normal. When the *Pneumococcus* type V was discovered, reliance was placed upon the sulfapyridine, 1.7 mg per hundred cubic centimeters concentration of free sulfapyridine in the blood was present. Two days later the number of colonies had increased from 6 per cubic centimeter to 123 per cubic centimeter. The following morning the patient died. The low concentration of sulfapyridine was ineffective, and the bacteremia persisted and the colony count increased.

obtained in the blood after various doses of sulfapyridine were given to adults, and these were compared with the concentrations obtained with sodium sulfapyridine.⁴

Single Doses of Sulfapyridine and of Sodium Sulfapyridine—Following a single 5-Gm dose of sulfapyridine by mouth, the highest blood concentration of the drug occurred after four or five hours and varied from 2 to 4 mg per hundred cubic centimeters. In 4 patients receiving a single 5-Gm dose of sodium sulfapyridine by mouth, the highest blood concentration occurred in two and one-half hours and varied from 4.5 to

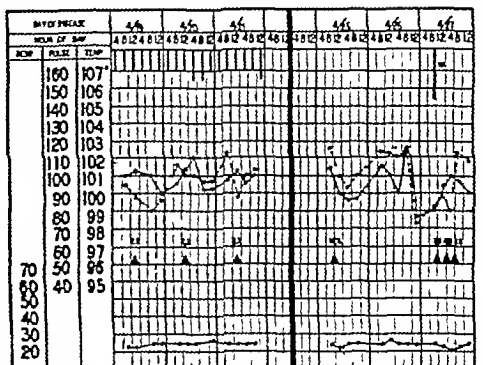


CHART 2 The 23-year old patient suffering from tuberculous meningitis received 2 or 3 Gm of sulfapyridine every four hours as indicated. The concentration of free sulfapyridine in the blood never exceeded 2.9 mg per hundred cubic centimeters. The sulfapyridine was discontinued until the blood contained none. Then 5 Gm of sodium sulfapyridine was injected intravenously and a concentration of 7 mg % was reached, which declined to 3.6 mg % in eight hours. The previous low concentration with large dosage was probably due to the nonabsorption of the drug.

8.4 mg %. When only 2 Gm of sodium sulfapyridine was given, only 2 mg % was present in four hours. Single 3-Gm doses of sodium sulfapyridine gave blood levels of 4.6 mg % as early as forty-five minutes in 1 case and 4.9 mg % in thirty-five minutes in the other. Single doses of 4 Gm of sodium sulfapyridine yielded a blood concentration of 3.8 mg % in one hour.

Because of the earlier higher initial concentration with 5-Gm doses, we adopted as our routine a first dose of 5 Gm of sodium sulfapyridine and 1 Gm every four hours thereafter.

Continued Doses of Sulfapyridine and of Sodium Sulfapyridine—After a 5-Gm dose followed by a 1-Gm dose of sulfapyridine every four hours day and night, blood levels ranged from 2 to 6 mg per hundred cubic centimeters, but these higher blood levels were only obtained after the sulfapyridine had been administered for twenty-four hours. When an initial dose of 5 Gm of sodium sulfapyridine was given, free sulfapyridine was sometimes observed in the blood in five minutes. The initial concentration

TABLE 1—AGE IN RELATION TO HIGHEST CONCENTRATION

Sulfapyridine Alone (Consecutive Cases)				
Highest Concn in Mg per 100 Cc.	Under 40 Years		40 Years and Over	
	Cases	Per- centage	Cases	Per- centage
0-3	16	21 0	9	19 1
4-5	29	38 2	9	19 1
6-8	17	22 4	16	34 1
9+	14	18 4	13	27 7
Total	76	100 0	47	100 0
Mortality rate		3 9		14 9

was as high as 8.0 mg %, and these high blood levels of free sulfapyridine tended to be maintained when the drug was continued in gram doses. In every case after the initial dose of 5 Gm of sodium sulfapyridine, the blood level of free sulfapyridine was 4 mg % or higher in two and one-half hours. Sodium sulfapyridine was well tolerated, and in no case did it cause any gastroenteritis or colitis because of its high alkalinity.

Intravenous Administration—When sodium sulfapyridine was administered by vein, a slightly higher concentration was obtained immediately than when it was given orally. It reached 9 mg per hundred cubic centimeters and gradually was reduced at the end of six hours to 4 mg %. Solutions of sodium sulfapyridine have a pH of 11, and, if there is extravasation, it causes marked irritation and even destruction of tissue. It was not found necessary recently to use intrathecal injections of sodium sulfapyridine in pneumococcus meningitis because good concentrations in the cerebrospinal canal can readily be obtained after an initial intravenous dose followed by continued oral use. The drug level in the cerebrospinal fluid may be continued or even raised by an intravenous drip. In several patients to whom the drug was given intrathecally in solution, the cord was damaged. The concentration of free sulfapyridine in the cerebrospinal fluid is about two-thirds of that in the blood, so that about 15 mg % should be maintained in the blood. Only by determining whether or not the blood level is low may it be known whether or not there should be a repetition of the drug intravenously.

Rectal Administration—Five Gm of sodium sulfapyridine given in suspension

into the colon showed little absorption, and this method of administration should not be depended upon to influence greatly the disease in a severely stricken patient. The drug was less absorbed from suppositories.

Excretion

The pathways of excretion were also studied. In the case of most drugs, urinary excretion markedly influences the blood level. However, we did not find this to be the case with sulfapyridine. We observed, in fact, that the blood levels were not proportionately higher when the initial excretion of sulfapyridine was reduced and that when the excretion was large the blood levels might remain unchanged. In a series of 7 patients receiving a single 5-Gm dose of sulfapyridine, the highest urinary output occurred in the period twenty-four to forty-eight hours after the sulfapyridine had been administered. Low blood concentrations without much urinary excretion have been found by other observers.⁴ Sulfapyridine is irregularly excreted in the urine in spite of uniform administration, and the amount of sulfapyridine in the urine is independent of the amount of urine passed in a unit of time. The excretion in the urine of total sulfapyridine varied from 40 to 60 per cent of the ingested drug. Such fluctuation occurs in different individuals and at different times in the same individual. If the kidneys are severely damaged, retention of the drug occurs, in older people the concentration is usually higher than in the young (Table 1). Because of the incomplete urinary excretion, it was thought that much might be eliminated through the liver or, if unabsorbed, would be found in the stool. In a number of examinations of the stools there were indications that appreciable amounts of the unabsorbed or liver-and-bowel excreted drug may be recovered.

The drug was found in the saliva very quickly, it appeared in traces 50 seconds after intravenous injection. After intravenous injection the recovered vomitus promptly showed sulfapyridine. This

TABLE 2—SULFAPYRIDINE

Term in Hours.	Correlation of Highest Concentration and Termination									
	Highest Blood Concentration									
	0-8 Mg		4-5 Mg		0-8 Mg		9+ Mg		Total	
No Cases Done	Rec. Cases	Per- centage	Rec. Cases	Per- centage	Rec. Cases	Per- centage	Rec. Cases	Per- centage	Rec. Cases	Per- centage
0-23	33	54.1	37	53.7	37	50.7	21	45.7	128	51.5
**	**									
DDDD	DD									
24-47	17	27.9	18	26.9	21	28.8	14	30.4	70	28.3
*	*		*							
D	D		D							
48-71	1	1.6	3	4.5	5	6.8	3	6.5	12	4.9
*	*									
D	D				DD		D			
72 +	10	16.4	10	14.9	10	13.7	8	17.4	38	15.4
*	*		*		*		**			
D			D		DD		DDDDDD			
Total cases	61	100.0	68	100.0	73	100.0	46	100.0	248	100.0
Total deaths	4		2		4		7		23	

*—Bacteremic. D—Deaths

complicates the problem of the nature of the vomiting, because it may be due to local irritation even when the drug is given intravenously. As soon as fifteen minutes after it was given intravenously, sulfapyridine was found in the sputum. In some cases the concentration in the sputum was higher than in the blood, this may account for good results in some patients with low blood concentrations. If the organisms in the bronchi are destroyed and if the blood is protected against invasion, those mechanisms in the alveoli that bring about recovery can operate against organisms, even if they are not destroyed by the drug or affected by demonstrable antibodies.

Conversion

It has been shown that free sulfapyridine is the only form that is actively bacteriostatic and bactericidal. This does not mean that acetyl sulfapyridine, one of the conversion products, is without therapeutic effect, because it was found that free sulfapyridine was present in the blood after acetyl sulfapyridine had been orally administered. Accordingly, we studied the conversion of the drug to acetyl sulfapyridine. It was observed that 40 to 60 per cent of the urinary excretion was acetylated sulfapyridine and that the greatest excretion of the acetylated drug after single doses was in the first twenty-four hours. Further, it was found that the amount of acetyl sulfapyridine in the blood during the first six hours was negligible. When

sulfapyridine is continued, the acetyl sulfapyridine is appreciably increased at the end of twenty-four hours. When sodium sulfapyridine is administered instead of sulfapyridine, a high concentration is present in the blood for twelve to eighteen hours before acetyl sulfapyridine is present, and the appearance of an appreciable quantity of acetyl sulfapyridine in the blood is delayed. It was observed in our laboratory that there was an amount of sulfapyridine present in the urine greater than could be accounted for by the solubility of the drug. It was surmised, because of the reducing power of the urine, that the drug was solubilized by the formation of a glycuronic acid compound. When the drug was fed to normals and to patients whose glycuronic acid excretion had been measured for several days on a standard diet, a three-fold increase in glycuronic acid excretion was observed.⁶ This was not observed in one subject who had complained of severe symptoms from the drug. Scudi, who joined with us in this first work, has since observed in rats that glycuronic acid excretion is interfered with by destroying the liver with phosphorus but that the acetylation is unchanged.

Distribution

It was first assumed that the drug was uniformly distributed throughout the tissues. We have already indicated that the concentration in the sputum may be above that in the blood. Accordingly, we analyzed the tissues of a number of

TABLE 3—SULFAPYRIDINE

Term in Hours	Correlation of Dosage and Termination									
	0-17		18-23		Total Grams Given 24-35		36 +		Total	
	Rec Cases	Per centage	Rec Cases	Per centage	Rec. Cases	Per centage	Rec Cases	Per centage	Rec. Cases	Per cent age
0-23	35 ***** DDDDDD	62 5	43	59 8	43	53 8	17	31 5	138	52 6
24-47	13 * DD	23 2	21 * D	29 2	23	28 7	15	27 7	72	27 5
48-71	2 DDD	3 6	4 * D	5 5	2	2 5	4	7 4	12	4 6
72 +	6 D	10 7	4 D	5 5	12 * DDDD	15 0	18 *** DDDD	33 4	40	15 3
Total cases	56		72		80		54		262	
Total deaths	12		3		4		4		23	

*—Bacteremic. D—Deaths

patients, and it was found that the concentration was high in the diseased lobe of the lung, in the skin, and in the kidneys where acetylation was also most advanced ⁷

Clinical Application

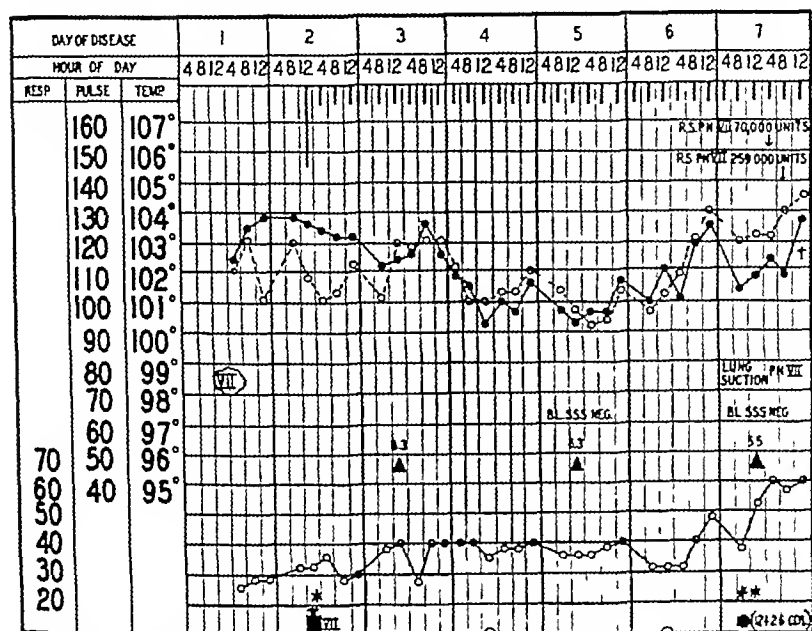
Having discussed the absorption, excretion, conversion, and distribution of the drug in the tissues, we shall now analyze our clinical experience to determine whether we may learn from it the optimal concentration to be attained. Before presenting the results of our analysis, it is important to observe that the conditions of the studies in patients preclude an exact experimental approach to the problem, because it is impossible to control or promptly estimate the virulence, the number, and the susceptibility of the infecting organisms and all the conditions that make for recovery and death in patients.

We did observe that in the first twenty-four hours there was the same percentage of recoveries regardless of the concentrations (Table 2). There were 6 deaths in this period, 4 of whom died before concentrations were determined and 2 who died with low concentrations. In the second twenty-four hours there were 3 deaths. 1 died before a concentration determination could be made, and the other 2 (bacteremic cases) had less than 6 mg per hundred cubic centimeters. In the third twenty-four hours deaths occurred with high as well as low concentra-

tions, and after that deaths occurred with high concentrations. These deaths were in patients with pneumonias associated with other conditions.

In the first twenty-four hours the number of patients recovering was similar regardless of the dosage (Table 3). Among those receiving less than 17 Gm there were 6 deaths, 4 of whom were bacteremic. In the second twenty-four hours there were 3 deaths in cases receiving less than 24 Gm. In the third twenty-four hours there were 4 deaths. In patients who lasted more than seventy-two hours, there were 10 deaths, 4 of whom were bacteremic. These cases had received more sulfapyridine. We saw patients who did not recover with a high concentration, and we observed patients who relapsed with a low concentration and in whom a higher concentration became necessary because of fastness to the drug. (This may develop in the course of treatment as shown in Chart 3 where the patient had a high concentration and died.) Because of toxicity or because the severest cases received a larger dose, a very high concentration may not be associated with recovery. The toxic action of the drug may contribute to the fatality.

We analyzed our experience in the treatment of cases with sulfapyridine and with sulfapyridine plus serum. This analysis revealed that there was no statistical difference in the mortality of patients having high or low concentrations of sulfapyridine. It was found that



NUMBER 133490 ♂ 43 YEARS

1 GRAM SODIUM SULFAPYRIDINE

○ SPUTUM

○ BLOOD CULTURE—NO GROWTH

● BLOOD CULTURE—PLATE POSITIVE

■ BLOOD CULTURE—BROTH POSITIVE

▲ MGS % CONCENTRATIONS SULFAPYRIDINE IN BLOOD

RESPIRATION—○—○ PULSE—□—□ TEMPERATURE—●—●

* 1/2 INHIBITION SULFAPYRIDINE 1-50,000

** NO INHIBITION SULFAPYRIDINE 1-20,000

MAC LEOD

LITTAUER PNEUMONIA RESEARCH FUND
NYU

CHART 3 This 43-year old male patient entered on the first day of his *Pneumococcus* type VII pneumonia. On the second day the broth was positive. He was given sulfapyridine alone and the following morning the concentration was 83 mg per hundred cubic centimeters. The blood remained sterile for four days. On the fifth day, his blood contained twelve colonies on one plate and twenty-six colonies on the other. The concentration in the blood was 5.5 mg %. Dr. Colin MacLeod kindly determined the response to sulfapyridine of the pneumococci of both blood cultures and found that the organism first obtained was sensitive to 1 in 50,000 sulfapyridine (2 mg %), while the organisms obtained five days later were not inhibited at all in 5 mg % concentration. No specific soluble substance was detected in the blood. On the seventh day the patient received upward of 329,000 units of rabbit serum and died that evening.

the average dose was 25 Gm and the range of desirable concentration was from 4 to 6 mg %, the median high concentration being 6 mg % while the median initial concentration was 5 mg % of free sulfapyridine. In 61 per cent of the cases the initial concentration was the highest one achieved by the patient. In 60 cases studied where the initial concentration of free sulfapyridine was the highest, there were 3 deaths, while in 60 cases where it was not the highest there were 8 deaths. We do not have knowledge of the concentration required in any one patient.

The advantages of adding serum to the therapy are evidenced by the fact that

fewer deaths, especially in bacteremic cases, occurred with adequate serum and sulfapyridine, and, in a significant number of cases, the illness ended more frequently within twenty-four hours (Chart 4).

Duration of Administration—Because many of the factors that determine effective therapy cannot be learned promptly, it should be assumed that the patients are infected with virulent organisms moderately susceptible to the drug and that a concentration of 4 to 6 mg per hundred cubic centimeters is desirable unless there are factors, such as meningitis, bacteremia, etc., requiring a larger concentration.

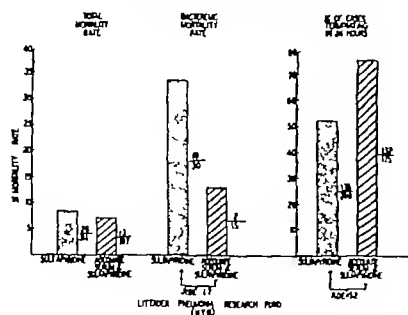
COMPARISON OF SULFAPYRIDINE AND ADEQUATE SERUM PLUS SULFAPYRIDINE
JAN 1939—APRIL 1940

CHART 4 These graphs compare the total mortality, the bacteremic mortality, and the shortening of the illness. The R.D.E. 52, for the shortening of illness, indicates that the duration in the two groups is significantly different.

For a long time it has been recommended by some that the drug should be administered for at least a week and gradually tapered off.³ The wisdom of this advice we have questioned, and, instead of giving small doses and achieving a gradual increased blood concentration and then tapering off, we have thought that it was better to reach a high concentration as soon as possible and administer the sulfapyridine over a shorter time. As shown by our experience, there is less formation of acetyl sulfapyridine, the toxic product, in this way. There was no correlation between the total amount

administered and the recovery rate of pneumonia patients.

Summary and Conclusions

It has been found in our studies that (1) sodium sulfapyridine gives, as a rule, a better absorption than sulfapyridine, (2) oral sodium sulfapyridine gives concentrations that are often as good as those obtained from intravenous administration, (3) absorption is principally from the intestine and does not occur well from the colon or rectum, (4) the drug is excreted irregularly from the kidneys and is found in high concentrations in the diseased lung, in the skin, and in the kidneys where the high acetylation is present, (5) if the high concentrations are obtained promptly, less drug is required and there are fewer deaths and there is less chance for toxic action.

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ANY PHYSICIAN MAY EXHIBIT "WHEN BOBBY GOES TO SCHOOL" TO THE PUBLIC

Under the rules laid down by the American Academy of Pediatrics, their new educational-to-the-public film "When Bobby Goes to School" may be exhibited to the public by any licensed physician in the United States. All that is required is that he obtain the endorsement by any officer of his county medical society. Endorsement blanks for this purpose may be obtained on application to the distributor, Mead Johnson & Company, Evansville, Indiana.

Such endorsement, however, is not required for showings by licensed physicians to medical groups for the purpose of familiarizing them with the message of the film. "When Bobby Goes to School" is a 16-mm sound film, free from advertising, dealing with the health appraisal of the school child, and may be borrowed without charge or obligation on application to the distributor, Mead Johnson & Company, Evansville, Indiana.

WONDERS WILL NEVER CEASE

A hopeful item in a fruit-growers' journal relates that a professor in a university in the western apple belt "has completed experiments in the nutritional research laboratory at the university which indicate that apple seeds are rich in a muscle-regulating substance, probably a vitamin. Eating ground apple seeds or drinking the oil which is pressed from them both caused remarkable recoveries in animals near death with wasted muscles."

THE CYNICAL MUSE

Health Service Incorporated
We don't want the indigent poor—
We're after the higher brackets
Thirty docs will collect the rocks—
It's the best of all possible rackets

Jingle developed by a Massachusetts medic after reading in the *New England Journal of Medicine* about a new kind of group practice.

—J.A.M.A.

THE INFLUENCE OF SULFAPYRIDINE ON THE PNEUMONIAS OF CHILDHOOD

A Clinical Study of 85 Cases at a Municipal Hospital

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(From the Pediatric Service, Lincoln Hospital)

THE problem of lowering the mortality rate of pneumonia in infancy and early childhood has been of the gravest importance to the pediatrician, the general practitioner, and everybody interested in the subject of pneumonia in children. In fact as recently as 1937, one of us (S. L. E.) in an article on lobar pneumonia in childhood¹ emphasized that "efforts should be made by all investigators to devise more effective therapeutic measures for treating lobar pneumonia in the age group under 2, where the mortality is highest."

The excellent results obtained by the English workers with M & B 693 stimulated a tremendous wave of interest in the treatment of pneumonia with this new therapeutic agent. Through the kindness of the American Manufacturer* of this drug, the Lincoln Hospital was allotted a supply of Dagenan or sulfapyridine (as it was later named by the Council of Pharmacy and Chemistry of the A. M. A.) to study its effect on the course of pneumonia in infancy and early childhood. This clinical study covering a six-month period was begun on December 19, 1938, and includes patients admitted to the hospital up to June 19, 1939—a total of 85 cases.

Age

For a three-month period (December, 1938, to March 19, 1939) the drug was administered almost exclusively to infants and children under the age of 2½ years, as our first consideration was to observe the effect on the mortality rate of this age group. In 7 other children sulfapyridine was used because the child was extremely ill or a type I pneumococcus had been obtained from pharyngeal swabbings. Since

type I pneumococcus has been the most frequent in causing empyema in childhood² not only in our institution but in most of the cases reported in the literature, we were interested in noting what effect, if any, sulfapyridine had on the prevention of this complication.

After the results of this preliminary study were submitted to the editor of the *J. A. M. A.* to be incorporated in the comprehensive study of the effect of sulfapyridine in pneumonia, it was determined to enlarge the scope of our study by offering the drug to all children having pneumonia regardless of their age.

The distribution of the patients according to age in the preliminary three-month series and the completed six-month group is found in Table 1.

TABLE 1

Age	No. of Patients Dec. 19 1938-March 19 1939	No. of Patients March 20-June 19 1939	Total, Dec.-June
	19 1939	19 1939	
10 days-6 months	6	6	12
6 months-1 year	4	7	11
1 year-2½ years	18	17	35
2½ years-and over	7	20	27

Classification of the Pneumonias

In this series of 85 cases, 60 patients had lobar pneumonia and 25 children had bronchopneumonia. This division represents the consensus of the staff, as it is difficult at times to be absolutely certain of the type of pneumonia in an individual case. Griffith³ sometime ago pointed out that whether a patient was considered to have lobar or bronchopneumonia depended on the examining physicians' reactions and not on incontrovertible evidence. The x-ray was only of infrequent aid in determining whether a pneumonia existed or what type of pneumonia was present. In the majority of the lobar

* Merck & Co. Inc. Rahway N. J.

TABLE 2—ORGANISM RESPONSIBLE FOR THE PNEUMONIA

Type Pneumococcus	No of Cases	Other Organisms	No of Cases
I	9	Streptococcus gamma	11
IV	1	Streptococcus beta	5
V	1	Streptococcus alpha	1
VI	4	Staphylococcus albus	7
VII	2		
IX	2		
X	3		
XI	1		
XIV	5		
XV	1		
XVI	3		
XVII	1		
XIX	1		
XX	1		
XXIV	1		
XXVII	1		

pneumonia patients diagnosed clinically, the x-ray confirmed the diagnosis, and only rarely did it reveal a pneumonia that might not have been suspected clinically. In very few cases of clinical bronchopneumonia did the x-ray confirm the diagnosis, a report of "negative for lesion of the lungs" or "increased lung markings" being all too frequently returned.

When the subsequent course or findings did not substantiate the diagnosis of pneumonia that case was excluded from the survey.

Severity of Illness

To aid in the analysis of the therapeutic results obtained with the drug, an attempt was made to classify the patients into three groups: the severely ill, moderately ill, or mildly ill. This classification represents the consensus of the staff of the condition of each child at the time when sulfapyridine was first administered. Thus, 34 children were severely sick, 50 were moderately sick, and 1 was mildly ill.

Day of Illness When Sulfapyridine Was Given

It is difficult at times to determine categorically the day of onset of a pneumonic process in the children admitted to a municipal hospital, for a number of them do not have medical attendance preceding their admission and so the decision as to the time of onset must be gleaned from the parents' story. Where the child has had an upper respiratory infection for some time or a gastroenteritis or an otitis media, etc., the problem of deciding when

the patient entered the pneumonic phase of his or her illness is even more difficult of solution. With these disturbing thoughts in mind we report that sulfapyridine was administered from the first to the twenty-fourth day of onset of the illness that brought the patient to the hospital. In the majority of the children in this series the drug was given on the fifth day of illness.

Organism Obtained from Pharyngeal and Laryngeal Swabbings, Sputum, Chest Fluid, or Blood

Cultures and typings were made on material obtained from swabbings of the pharynx and larynx or from sputum. When fluid from the pleural cavity was obtained, it was cultured and typed, and a routine blood culture was performed on every patient. The organisms cultured from these sources are listed in Table 2.

The tabulation reveals that type I pneumococcus was the most frequent organism cultured in this series. This was followed by type XIV and type VI, and the higher type pneumococci were recovered in over half the cases. In the streptococcal group of pneumonias, the *Streptococcus gamma* was most frequently obtained. It is worthy of note that, of the 61 cases in which an organism was reported recovered, 40 per cent did not show pneumococci.

Reliable positive blood cultures were reported in 3 of the patients. The *Str. gamma* was recovered in 2 of these patients and type I pneumococcus in the remaining 1. Although *Staphylococcus albus* was reported in a few others, these were considered contaminations, since the organisms cultured from swabbings of the pharynx and larynx were of different types.

Sulfapyridine Administration—Dosage and Effect on Clinical Course

Sulfapyridine was given to each child according to the following schedule for the first twenty-four hours, the total daily dose equivalent to 0.2 Gm per kilogram of body weight was divided into six equal doses and given at four-hour

intervals The tablets were crushed, suspended in water, and administered orally In the following twenty-four hours, the total daily dose corresponding to 0.1 Gm per kilogram of body weight was given in divided equal doses at four-hour intervals This last dose was continued three times on the third day and thereafter until the temperature was normal for three days

For the most part no difficulty was encountered by the nurse in giving the drug, and, in the few cases where nausea or vomiting occurred, the medication, administered in fruit juices, milk, jelly, or $\frac{1}{2}$ drachm of paregoric, preceded the administration of the drug In the majority of cases sulfapyridine was given for five days, and the longest period of administration was twenty-four days Sulfapyridine administration was always preceded by a routine urine and blood examination Although a few patients exhibited a mild to a moderate secondary anemia and some had a leukocyte count around 6,500, nevertheless, these findings did not prove to be any real contraindication to the drug administration as the subsequent clinical course of these patients demonstrated

In the majority of the patients, irrespective of their age, there was a dramatic drop in the temperature from 103 to 105 F to a normal temperature in twelve to forty-eight hours In other patients where the drop was not so precipitous, a normal temperature was reached by rapid lysis in three days Where the temperature did not become normal in three days, a complication was usually found or the patient went on to a fatal termination In about one-fifth of the cases a secondary rise in temperature from 101 to 104 F was noted on the fourth or sixth day after therapy was instituted This flurry in temperature was sometimes accompanied by signs or symptoms of a seeming relapse, but, nevertheless, it quickly subsided in twenty-four to forty-eight hours

Besides the almost uniform decrease in the temperature within the first twelve to twenty-four hours, there was noted a definite subsidence of the toxic appearance of

the child—in many instances the change was so marked as to belie the presence of the underlying pneumonia An active interest in the surroundings and an increased desire for fluids were noted on the second day In a scant few instances it was noted that despite the fall in temperature induced by the drug the patient continued to look sick for a day or two longer and then assumed the usual improved appearance

In the majority of cases the consolidation in the lungs as revealed by serial x-rays did not clear up any faster than formerly, nor did the drop in the temperature indicate the onset of resolution, for in most cases evidence of resolution lagged behind the decrease in the temperature

Additional Therapeutic Measures

Although sulfapyridine was the sole therapeutic measure employed in the vast majority of the patients, nevertheless, it had to be supplemented by the administration of oxygen in 16 cases, transfusion in 8 cases, and the use of supportive measures such as infusion, clysis, sedatives, etc., in 10 cases In 3 cases anti-pneumococcus serum was given in conjunction with sulfapyridine, in 1 case because of the presence of a type I pneumococcus bacteremia and in 2 other patients because of their extreme critical condition and the availability of the proper serums

In 1 patient a continuous infusion was given because of a complicating gastroenteritis Of interest is the fact that in only 2 patients was abdominal distention present to the extent of requiring relief by the usual measures employed to combat this complication, which is in striking contrast to the findings noted in a previous survey

Complications

Table 3 lists in the order of frequency the complications observed in this series Otitis media as usual heads the list. In a number of instances it was noted before sulfapyridine was given, and in a few cases it appeared after the drug had been discontinued However, in most of the

TABLE 3

Complications	
Otitis media	24
Empyema and effusion	9
Meningism	10
Gastroenteritis	5
Distention	3
Cervical adenitis	4
Nephritis	1
Toxic psychosis	1
Furunculosis	1
Submaxillary gland involvement	1
Generalized peritonitis	1

patients it developed during the course of sulfapyridine administration. Meningism was present at the time of hospital admission and before the drug was given. In every case where it was noted as a complication, it appeared that sulfapyridine had no appreciable effect on the length of time it took to subside. Of the 9 cases showing evidence of fluid in the pleural cavity, 3 had this complication when admitted to the hospital. Five of the cases were successfully treated with repeated chest aspirations, and in 3 of the 5 the fluid remained thin. In only 4 cases was surgical intervention necessary to clear up the empyema. Type I pneumococci were recovered from the chest fluid in 4 of the patients, *Streptococcus beta* from 2 cases, type V pneumococcus from 2, *Staphylococcus albus* from 1, and in 2 cases no organism was cultured out. Gastroenteritis appeared in 5 patients, most of it during a period when epidemic diarrhea was prevalent on the ward.

Hospital Stay

The uncomplicated cases stayed in the hospital for ten to seventeen days with an average stay of thirteen days. Although a number of these children could have been discharged earlier, it was felt advisable to keep these patients under observation for the possible development of any late complication or toxic drug reaction.

Toxic Reactions of Sulfapyridine

Surprisingly few toxic reactions were noted in this series. Three patients showed skin eruptions, two being measles-like in appearance and one distinctly urticarial. In 2 of these cases there were other allergic manifestations or an allergic history, and in the third case a poor

resistance of the skin, as indicated by furunculosis, was present. Two cases had diarrhea and 1 patient had a hematuria. The hemopoietic system was affected in only 2 cases—in 1 there was a pronounced drop in the red blood count and Hgb, and the drug was discontinued, and in the other case, agranulocytosis developed from which the patient recovered. In only 1 case was cyanosis noted, and this was in one of the allergic patients who had developed a rash.

The most serious reaction in this series was the agranulocytosis which developed in a 1-year-old boy who was admitted February 26, 1938, for diarrhea and shortly thereafter developed lobar pneumonia (L.L.L.) of type XVI pneumococcus. Sulfapyridine was begun March 4, 1939, and stopped after five days with a very good result, and the child was discharged on March 12, 1939. The child was readmitted on March 17 for R.L.L. pneumonia with a white blood count of 12,650 and polymorphonuclears 72 per cent. He was given sulfapyridine for five days, again with a good result. On March 31, 1939, the child developed a diarrhea which continued with a low-grade temperature until April 10, 1939. On April 14, 1939, the patient presented evidence of bronchopneumonia. Sulfapyridine therapy was again begun and was promptly discontinued after one dose of the drug had been given when the white blood count was reported to be 4,750. The child looked quite toxic, the leukocytes steadily diminished, and three days later the white blood count was 3,200 with 1 per cent polymorphonuclears. With the aid of transfusion, liver extract, and a continuous infusion the count rose to 9,450 and the polymorphonuclears to 27 per cent in three days, and the convalescence was thereafter uneventful.

Mortality

In this group of 85 cases there were 6 deaths giving a mortality percentage rate of 7.0 for the series. Excluded from consideration in this survey were those children who died within twelve hours of admission to the hospital. All of the

deaths occurred in the age group under 2½ years, and the mortality rate of this group of 58 children was 10 per cent. Of particular interest is the fact that the pneumococcus was not recovered from any child who died, the organisms implicated being the *Streptococcus gamma* in 2 cases, *Staphylococcus albus* in 1 case, and in the other 3 no organism was cultured out.

In 3 cases the real cause of death was believed to be diarrhea. This was proved on postmortem examination in 1 case when, besides a bilateral bronchopneumonia, an acute ulcerative enteritis was disclosed. In 2 of the deaths the pneumonia course was not at all inhibited by the sulfapyridine, the patients steadily going downhill to a fatal termination.

The sixth patient was extremely ill on admission and was believed to have a pneumonia, although no definite evidence was present. Because of fullness of the abdomen, some abdominal pain, and spasticity of abdominal musculature, a peritoneal tap was performed and disclosed pus. The child died shortly afterward, and a postmortem examination revealed an acute generalized peritonitis, congestion of the lungs, and a congenital absence of left kidney and ureter.

Discussion

The results obtained with sulfapyridine in this study are in keeping with the favorable results reported in the literature. It can be rightly said that sulfapyridine is the most outstanding addition to our therapeutic armamentarium in the treatment of pneumonia in childhood. Its ease of administration to infants and children and its comparative inexpensiveness are bound to appeal to the pediatrician and general practitioner. The majority of infants and children take the drug readily enough when it is suspended in water, milk, fruit juices, jellies, or applesauce. Where nausea and vomiting has been encountered during sulfapyridine administration, it has been relieved by omitting one or two doses, giving smaller doses at more frequent intervals or preceding the dose with ½ to 1 drachm of

paregoric. Marshall and Long⁴ advocate the use of sodium sulfapyridine intravenously where severe vomiting is experienced.

It must be admitted that we still do not know the optimum dosage consistent with recovery from pneumonia in childhood, nor are we definite as to the proper interval of administration.

Marshall, Bratton, and Litchfield⁵ have demonstrated that because of varying solubility and absorption of sulfapyridine in the human system there is a variable concentration of the drug in the blood when the same amount of sulfapyridine is given orally. Wilson, *et al.*,⁶ feel from their series that a dosage that brings about a level of approximately 4 mg per hundred cubic centimeters in the blood will provide a satisfactory clinical response. Their report and others show, however, recovery where the blood concentration is even less.

It is quite likely that patients with pneumonia may not recover even though a much higher concentration than 4 mg may be present in the blood. Ross⁷ reported a case of pneumococcus meningitis that did not recover even though the blood concentration was high because of the apparent tolerance or fastness to the drug acquired by the pneumococcus. This fact was previously demonstrated by McLean, Roger, and Fleming who showed that pneumococci can readily acquire tolerance to sulfapyridine. Therefore it would be wise to adopt the policy of typing the pneumonias and giving specific antisera where available when a patient does not respond satisfactorily to sulfapyridine after two days. This procedure would improve the immunity of the patient so that the infecting organisms could be destroyed before they had time to acquire any tolerance to the drug.

This survey indicates that sulfapyridine was therapeutically effective in the majority of cases regardless of the day of illness when the drug was first administered. This observation has also been noted by Hodes, *et al.*,⁸ and Mac Call.¹¹ We do not feel that sulfapyridine prevents the usual complications of pneu-

monia from developing, nor does it have much influence on the complications already present when the drug is first administered

It is our impression that sulfapyridine neither hastens the resolution nor prevents the spread of a pneumonic process, but we are quite aware of the almost miraculous inhibition of toxicity and the dramatic antipyretic effect of the drug

It has been universally believed that sulfapyridine caused a disappearance of the infecting organisms from the sputum and nasopharynx, but Hodes, *et al*,⁸ found that, in 12 out of 23 patients, cultures made two days after sulfapyridine had been stopped showed pneumococci to be still present. This, they feel, may have a bearing on the relapses in their series, since 4 children developed a second attack of pneumonia within two weeks after sulfapyridine was discontinued. In our series, 2 patients came back with pneumonia after having been discharged from the hospital only a relatively short time.

Lawrence⁹ feels that sulfapyridine produces a beneficial effect in pneumonia because it causes first, a loss of type specificity, then decapsulation, and, finally, an inability of the pneumococcus to grow on artificial mediums or the mouse peritoneum.

We have been impressed by the fact that in the present group of cases very little abdominal distention was encountered, which is in marked contrast to our previous experiences. We have also noted that less recourse was had to therapeutic procedures such as oxygen, transfusion, clays, etc., than in former years.

It is the general belief among pediatricians that in children, at least, the pneumonias in 1939 have not been as severe as in past years—that there probably has been a lessening in virulence of the organism responsible for the pneumonias. Where control series have been reported, the mortality figures obtained were the same or almost as good as in the sulfapyridine-treated group—consequently, the uniformly good results re-

ported in the literature during the past season may not be a true index of the therapeutic effectiveness of sulfapyridine.

The only serious toxic reaction in our series, that of agranulocytosis, indicates that sulfapyridine is a comparatively safe drug to use when the precautionary measures are observed of examining the urine and the blood before and during the administration of the drug and at less frequent intervals during convalescence. It is wise to ensure a good fluid intake in order to avoid concentration of urine with the possible formation of crystals and consequent hematuria.

In our series it was noted that the toxic reactions appeared, for the most part, in children who were allergic or had an allergic background.

Summary

1 A six-month study of 85 cases of pneumonia in infancy and childhood treated with sulfapyridine is presented.

2 Sulfapyridine is a most effective addition to the pediatrician's armamentarium in the treatment of pneumonia, and its ease of administration and comparative inexpensiveness will appeal to all practitioners of medicine.

3 The optimum dosage and the proper interval of administration of the drug needs further study.

4 Sulfapyridine has comparatively little effect on preventing the complications of pneumonia or affecting the complications already present.

5 The antipyretic action of sulfapyridine and the reduction of toxicity in children are quite evident, but it has no effect on hastening the resolution or preventing the spread of a pneumonic process.

6 In this study abdominal distention was not noted as frequently as in former years, and other therapeutic procedures such as oxygen, transfusion, clays, etc., were used less frequently.

7 Comparatively few toxic reactions from sulfapyridine were noted, and only one serious reaction (agranulocytosis) was encountered. Frequent examination

of the urine and blood are important during treatment of the patient.

8 The season of 1939 may not offer a true therapeutic index of the effectiveness of sulfapyridine, as the virulence of the infecting organisms seemed to be less than in previous years

9 Further observation of the drug in the treatment of pneumonia in childhood is definitely warranted.

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MAKE IT SNAPPY, SISTER!

This was the title of an advertisement in *The New York Times* recently in which was pictured a woman of poor circumstances consulting a physician in his office, on whose face we failed to recognize the sympathetic understanding to which we are accustomed from men of that noble profession. But we'll let the ad speak for itself

"This doctor can't sit listening to your tale of woe. He's not a private physician. He works for the government, not you. You're just one of the people assigned to him by the political overster. Ten more of you are in the waiting room, with probably 20 or 30 to come. You can't expect time and sympathy under conditions like that. So snap into it, comrade! Briefly, now, what seems to be the trouble?"

That's socialized medicine, run by politicians, based on quantity, not quality, and paid for by payroll taxes. It is the thing you can expect here in the next few years unless the people wake up and stop it. Compare it with the traditional American system of private medicine in which the individual freely selects and consults the physician in an atmosphere of intimate and friendly confidence, and pays him directly—June 1940, *Liter Bulletins* of Armstrong, Elk, McKean, Mercer, Mifflin, Warren, and Wyoming county (Penna.) medical societies

ANOTHER KIND OF PREPAREDNESS

If you do not equip yourself to do periodic health examinations you may find yourself as unprepared as the democracies are to the new blitzkrieg type of warfare, remarks the *Journal of the Michigan State Medical Society*

Perhaps you feel that overnight you can prepare yourself to evaluate satisfactorily the health of a supposedly healthy person. It won't take you quite as long as it will take the United States to build airplanes and tanks, but you can't do it overnight.

Survey yourself and your office equipment to determine your capability to make a complete physical examination and then begin testing your ability. The ordinary life insurance examina-

MEDICAL PREPAREDNESS—CONFUSION

In order to avoid a considerable amount of confusion which it says already is apparent, the National Committee on Medical Preparedness of the American Medical Association feels that the early appointment of a coordinator for medical and health services is an urgent necessity, a report on a recent meeting of the Committee, published in *The Journal of the Association for August 10*, reveals

The report of the Committee's action says "Attention was called to the fact that many organizations of physicians had offered their services through the Committee, including the American Heart Association, the National Organization of Women Physicians, the National Medical Association, and similar bodies. Apparently some of these associations had been specifically asked by various governmental agencies to undertake certain projects. It was voted that a message be drafted and sent to the Advisory Committee on National Defense and to the President, calling attention to the fact that the Committee on Medical Preparedness meeting with representatives of governmental agencies already finds evidence of duplication of effort and of much confusion and that it is felt that the early appointment of a coordinator for medical and health services is greatly desired in order to speed mobilization of medical resources for any emergency."

tion has been accepted by many people, both lay and medical, as a complete examination, but thoughtful consideration reveals the falsity of that premise.

For a number of years the American Medical Association has attempted to stimulate interest in complete physical examinations. It publishes blanks which are rather capable guides. It also publishes a manual on "Periodic Examinations" (obtainable from the American Medical Association, 535 North Dearborn Street, Chicago for twenty-five cents), which is extremely valuable.

Don't wait for the public to demand these examinations. Keep ahead of the crowd and offer it to your patients.

A SURVEY OF EIGHTEEN YEARS OF PNEUMONIA AT THE NASSAU HOSPITAL

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A SURVEY of eighteen years of pneumonia at the Nassau Hospital covers a very interesting period in the history of this disease. During this time great progress has occurred in the management and treatment of pneumonia, represented principally by the development and practical application of antipneumococcus serum and the recent dramatic advances in the field of chemotherapy.

In 1922 when this series started, we treated our pneumonias without the help of specific serums, and oxygen, as then used, was of little benefit. Many physicians digitalized their patients routinely and gave morphine freely. Others exposed their patients to all the cold air available, winter or summer. Although antipneumococcus serum was introduced by Cole and Dochez in 1913 and Felton's improved product appeared in 1924, the Nassau Hospital was slow in using it extensively. Knowledge was considerably ahead of its practical application. In the earlier years the laboratory was not considered an essential adjunct to treatment, and a pneumonia case was not looked upon as an emergency. We classified our cases in terms of pathologic distribution of the lesion—lobar pneumonia and bronchopneumonia—and this differentiation was often difficult to make. We gradually began to think in terms of the invading organism, and now the terms pneumococcic and nonpneumococcic seem much more expressive. We have learned how to apply our diagnostic and therapeutic knowledge and, hence, approach our pneumonia patient with much greater confidence than we did in 1922.

Material Presented

Included in this survey are 1,894 cases of pneumonia treated at the Nassau Hospital from 1922 through 1939. Since

the advent of sulfapyridine marked a distinct change in treatment, the cases up to 1939, 1,723 in number, have been considered separately, and a summary of the first sulfapyridine year has been added. In all these cases a definite diagnosis of pneumonia of some type was made. Questionable cases, as hypostatic or terminal pneumonias, possible lung infarcts, and pneumonitis accompanying neoplasms, were omitted. Both adults and children and private as well as ward cases were included. About 70 per cent of the total were ward patients.

Procedure Compared

It is of historical interest to compare the management of pneumonia cases in 1922 and 1938. In 1922 in the Nassau Hospital little use was made of the laboratory. Sputums were not examined, blood cultures were not done, and only a small percentage of the patients were x-rayed. No case was serum-treated, oxygen was given by the open funnel method—a favorite prescription being "oxygen, five minutes every hour"—and drugs were given much more freely. In 1922, 74 per cent were given digitalis, and in 1927, 68 per cent were given digitalis and 43 per cent, morphine. Digitalis and morphine were considered good treatment. The attending physician worried about the heart rather than the toxemia. Strychnine, expectorant cough mixtures, and other drugs were frequently used.

In 1938, 96 per cent had sputum examinations, 48 per cent had blood cultures done, and 87 per cent were x-rayed. Sixty-four per cent showed a type pneumococcus in the sputum, and 46 per cent of this number were serum treated. Oxygen, by tent or the intranasal catheter method, was given to all toxic and moderately toxic cases, and digitalis was given

only to patients who had heart disease and indicated it. Morphine was rarely used. The mortality in 1922 was 31.5 per cent and in 1938, 11 per cent. The average day of admission was four and seven-tenths days in 1922 and two and six-tenths days in 1938. Now, cases are not only admitted earlier in the disease but treatment is started at once upon admission.

This change in management is herewith illustrated.

	Percentage				
	Sputum examined	Blood culture	X Ray	Digitalis	Serum
1922	5.2	2.6	10.5	74.0	0
1929	60.0	34.1	80.3	76.3	15.1
1936	69.0	56.8	67.4	0	7.7
1938	96.0	48.0	87.4	0	29.1

Mortality

Tables 1, 2, and 3 furnish data as to general mortality, yearly mortality, day of disease admitted to hospital, and percentage of cases under 10 and over 60 years of age.

TABLE 1—GENERAL MORTALITY

	Cases	Mortality	Percentage
Total	1,723	24.6	
Lobar pneumonia	1,236	25.4	
Bronchopneumonia	487	22.8	
Pneumococcal pneumonia	891	23.1	

TABLE 2—MORTALITY IN GROUPS OF YEARS

1922-1924	96	23.3	
1925-1927	243	30.4	
1928-1930	300	29.0	
1931-1933	397	25.2	
1934-1936	395	22.8	
1937-1938	292	14.4	

The steady decline in the mortality rate from 33.3 per cent in the three-year period, 1922-1924, to 14.4 per cent in 1937 and 1938 and 11 per cent in 1938 is impressive. The significant drop has occurred, however, only in the last four years, 1935-1938. The reasons for this improvement will be discussed later in this paper.

TABLE 4

	Type	Cases	Mortality, Percentage
Group Total	I	251	20.7
	II	36	44.4
	III	109	41.3
	IV	495	18.7
		891	23.1
1931-1934	I	72	23.6
	II	10	40.0
1935-1938	I	99	18.1
	II	9	55.5

Pneumococcal Pneumonias

Of the total, the type was established in 891 cases, that is, there were 891 proved pneumococcal pneumonias with a mortality of 23.1 per cent (Table 4). We have continued the use of "group IV" throughout this series, since it has only been during the past two years that our laboratory has been equipped to differentiate all thirty-two types. The incidence and mortality in the four groups show nothing significant, except the small number and high mortality of cases of type II. On Long Island, type II seems to occur less frequently than it does in many sections of the country. A comparison of the four-year periods, 1931-1934 and 1935-1938, shows a definite im-

TABLE 3

	Mortality	Percentage of Cases Under 10 Yr. of Age	Percentage of Cases 60 Yr. and Over	Average Day of Disease Admitted	Percentage, Blood Culture Taken	Percentage, X Ray
1922	31.5	15.7	10.4	4.7	0	10.5
1923	51.8	14.1	11.0	3.9	0	11.0
1924	19.0	19.3	9.6	5.0	0	16.0
1925	31.2	23.6	7.5	5.0	0	17.1
1926	33.3	28.2	7.7	4.4	2.8	19.0
1927	25.6	18.9	8.0	3.2	2.4	41.9
1928	33.0	29.3	10.1	4.3	5.6	31.2
1929	24.6	31.6	6.3	3.7	34.1	30.3
1930	28.5	30.0	13.0	3.6	43.7	40.0
1931	28.0	30.2	4.6	3.7	51.1	70.9
1932	23.1	47.0	2.8	4.0	31.4	73.5
1933	26.4	30.0	6.4	3.8	40.9	50.0
1934	29.5	38.6	9.0	4.0	50.5	57.5
1935	17.9	41.0	9.7	4.0	52.2	54.4
1936	20.9	30.0	18.6	3.5	55.5	67.4
1937	18.1	36.3	9.0	2.9	46.6	83.0
1938	11.0	31.5	9.4	2.6	48.8	87.4

provement in the mortality rate of type I's. This includes both serum-treated and untreated cases

TABLE 5

Type	Cases	Mortality, Percentage
I	118	22.0
II	8	37.5
III	0	
IV	19	5.2
Total	145	20.6
Untreated cases	1,578	25.0

Serum-Treated Cases

The mortality in 145 serum-treated cases was 20.6 and in the large untreated group was 25.0 (Table 5). The type I treated mortality was 22 per cent. This is high. Dr Bullowa¹ from the Harlem Hospital reports from 1928-36, 752 serum-treated adult cases of type I with a 13.3 mortality. Finland and Brown² report 459 from the Boston City Hospital with a 19 per cent rate, and the New York State Health Department³ reported a hospital series of 1,475 cases with an 18.5 mortality. However, during the past four years our results have been much better—a rate of 15.7 mortality in the treated group and 17.3 in the untreated. This compares more favorably with other recent series. One of these collected by Cecil⁴—a group of 3,136 type I treated cases—showed a mortality of 13.6 per cent.

When we compare our statistics with others, several factors have to be considered. This series goes back over a period of eighteen years so it cannot be compared with series including only the past four or five years. We have included bronchopneumonias as well as lobar pneumonias, but this classification is inaccurate, for many of the bronchopneumonias were probably lobar with but small areas of consolidation and some of these showed pneumococci. Up to 1935 the death rate in the two groups, lobar pneumonia and bronchopneumonia, was almost the same—less than $\frac{1}{2}$ per cent difference. Children, including infants, also appear in this series, so it cannot be compared with adult groups. The tendency has also been until recent years to treat only the sickest patients with serum,

and this has included many hopeless cases arriving at the hospital late in the disease. Our treatment has steadily improved, as our results since 1935 demonstrate. The 19 cases from group IV and types IV to XXXII that were treated showed excellent results—5.2 mortality.

Blood Cultures

As shown in Table 3, it was not until 1929 that the importance of blood cultures began to be recognized. Routine blood cultures are supposed to be done on all cases, but for various reasons they are omitted. In mild cases and in cases that were of a type for which we had no serum, many physicians would not order blood cultures. In all, 603 cases had one or more done, 132 of these were positive, of which 58.3 per cent died. Of this number, 53 were serum-treated with a 35.8 per cent mortality.

TABLE 6

	Cases	Mortality, Percentage
0-1	103	42.7
1-10	478	10.7
10-20	166	9.0
20-30	187	18.7
30-40	252	18.6
40-50	239	25.1
50-60	163	41.7
60-70	99	49.0
70-80	43	65.1
80-90	8	62.5

Age Groupings

The age groupings (Table 6) show nothing unusual except a higher mortality than usually reported among infants. A mortality of 42.7 per cent is definitely high and difficult to explain, for there were no cases in the newborn and very few in the first weeks of life. It is only during the last three or four years that serum was given to children to any extent, which may in part explain this high death rate. Dr Bullowa, from the Harlem Hospital, in a series of 1,712 children—serum-treated and nontreated—found a mortality of 13.2 per cent. Ours was 16.5 per cent.

Complications and Associated Diseases

Next to persons suffering with pericarditis, alcoholic patients fare worst, 15

TABLE 7

	Cases	Mortality Percentage
Pneumonia	4	100 0
Alcoholic	16	93 7
Meningitis	9	77 7
Peritonitis	6	66 6
Traumatic	15	53 3
Asthma	7	42 8
Lung abscess	17	41 2
Cardiac	88	34 0
Postoperative	104	26 9
Empyema	118	21 2
Pregnancy	20	20 0
Diabetes	10	20 0
Local abscess	14	7 7
Otitis media	112	0 0

out of 16 dying (Table 7) Seven per cent of the total were operated on for empyema, and of these 118 cases, 21 per cent died. The bacteriology of the empyemas is interesting. Fifty-three showed type I, whereas only 13 out of twice the number of cases showed group IV. There were only 104 postoperative pneumonias, which is a very good record for such a large surgical service as we have at Nassau Hospital. The mortality in these cases was about the same as the general mortality. It is interesting to note that in 112 cases with otitis media there was not a single death. Most of them were in infants and children, and a few resulted in mastoidectomies. From this series it would appear that otitis media is not a serious complication.

Discussion

What is responsible for the decline in mortality rate? How much of this improvement is due to serum and how much to other factors?

Serum has not played as important a role as we would like to think. Only 8 per cent of our total series received serum—145 cases—of which 30 or 20.6 per cent died. The serum results up to 1935 were unsatisfactory according to our present standards of treatment. In many cases serum was started too late in the disease, as the cases were hospitalized late. Too little serum was given, and it was not given intensively enough. This was partly due to economic reasons, which have been overcome since the state started the free distribution of serum. It is, therefore, unfair to blame serum for our poor results. It is also true that the sickest cases were usually selected for

serum therapy. During the past four years in type I's, which represent most of the serum cases, there has been definite improvement—a 15.7 mortality rate in the treated cases against 17.3 in the untreated. During the previous four years there were 38 untreated type I's with a 21 per cent mortality and 34 treated cases with a 26.5 per cent mortality. Here again it must be remembered that the treated groups were generally more severe.

It is true that it is during the past four years, coincident with the improvement in general mortality, that our serum therapy has been successful—that is, it compares favorably with results of other hospitals. During this four-year period 77 cases (all types) were treated, with a 13 per cent mortality. This is good, but in 478 untreated cases the rate was only 17.3 per cent. If we assume that, without serum, 20 instead of 10 of the 77 cases had died, the rate would have been 26 per cent, much higher than the untreated mortality. This assumption would raise the total four-year rate from 16.9 to 18.7, which would still be a marked improvement over previous years.

In this particular series, with only 8 per cent of the total number of cases being serum-treated and the mortality of this group 20.6 per cent, it seems safe to say that other factors than serum must be largely responsible for the improved death rate. What are they?

Is pneumonia a less virulent disease than it used to be? Studies in mass statistics, especially blood-culture studies, might answer this. Are more pneumonias, including milder ones, being hospitalized? This is probably so, for our case rate has stayed about the same, in spite of the large pneumonia service at Meadowbrook (a new county hospital) having been a factor since 1935. Many of the indigent and welfare cases, which were previously sent to Nassau, now go to Meadowbrook. Knowing both hospitals, it does not seem that this factor is a very important one.

Is the more extensive use of oxygen a factor? It certainly is. Many more

mildly and moderately toxic cases receive oxygen now than was the case ten years ago, and the methods of administration have greatly improved.

Has a shift in age groups treated been a factor? Table 3 shows the upward trend in the number of children treated. Whereas there is a distinct increase during recent years over the earlier years, there is little difference during the past eight years. In 1931-1934 the percentage of children was 35, and in 1935-1938 it was 34.7—practically the same—whereas the mortality during these same two periods of years was 26.3 per cent and 16.9 per cent.

The curve of the percentage of treated patients over 60 years of age fluctuates but has shown little general change (Table 3). Therefore, the change in age groups is not the answer.

When we study the variations in the proportion of ward to private patients, nothing of significance is disclosed. In 1938 the percentage of private patients was much higher than usual, but the death rate was 4 per cent higher in the private than ward group, which is quite the reverse from other years.

Are the cases being treated earlier? They are. Treatment is started at once, whereas in the early years much time was lost. Table 3 shows that cases are being hospitalized earlier. The average day of admission was 2.6 in 1938 and 4.7 in 1922. During the thirteen years prior to 1935, only 45 per cent were admitted before the fourth day of the disease, and since 1935 this percentage has increased to 63 and to 73 in 1938. Up to 1935, 5.8 per cent died on the first day in the hospital, and during the last four years this number is only 2.3 per cent, showing that fewer late and moribund cases are hospitalized. The importance of early treatment, whatever the treatment is, has again and again been emphasized.

During the past four years, coincident with the greatest improvement in mortality, public health education (conducted by the State Health Department), our medical societies, and other interested organizations have campaigned against pneumonia. The medical profession and

the public have been urged to heed early symptoms and seek treatment. The treatment of pneumonia is more and more being considered an emergency. Paradoxically, serum may have played a more important role than we have attributed to it, for public health education has popularized and stressed the importance of early administration, and the doctor has sent the patient to the hospital early with the hope that he might be a candidate for serum. Thus, serum or no serum, precious days have been saved. We cannot but believe that this last factor, that of public health education, is one of the most important in explaining our improved results.

1939—The First Sulfapyridine Year

Since the foregoing survey was completed, the 1939 pneumonias have been added. This being the first year in which sulfapyridine was used at the Nassau Hospital, the comparison is of interest. As in previous years all definite pneumonias were included, 171 in number. The average day of admission was 3.1. Ninety-six per cent of these cases had their sputum examined, 64 per cent had blood cultures, and 89 per cent had chest x-rays. One hundred and one or 59 per cent showed pneumococci in the sputum classified as follows: type I, 15, type II, none, type III, 11, type IV, 6, type V, 2, type VII, 6, type VIII, 9, type XIV, 8, type XIX, 6, and the rest scattered among the higher types. In 20 cases the pneumococcus could not be identified or more than one type was found. Of the 110 blood cultures taken 10 were positive. Of this number 3 died.

The age groupings showed little change from previous years, 37.4 per cent were under 10 years of age and 11.6 per cent were over 60. Complications were fewer in 1939, the only serious ones being 5 cases that developed empyema and 1 with a lung abscess. They all recovered.

Treatment—One hundred and forty-two cases were treated with sulfapyridine. In 12 of these, serum was also given, 11 being type I's. Four of these cases were very sick and were treated intensively,

2 dying, but in the others serum treatment was started and discontinued because of marked improvement. Much less oxygen was used because of the prompt response to sulfapyridine therapy.

Mortality—Ten or 5.8 per cent of the 171 cases died. This is by far the lowest mortality of any of the eighteen years included in this survey. Of the 142 sulfapyridine-treated cases, 7 or 4.9 per cent died. Other factors than improved therapy probably partially account for this improved death rate. Undoubtedly several mild cases were hospitalized which would not have been a few years ago. In this locality, 1939 has seemed to have been a light pneumonia year. The Nassau County Health Department reports the mortality for the county (approximately a 450,000 population) as a little under 10 per cent, which is low. The high percentage of higher types and the low percentage of positive blood cultures also bear this out. No matter how conservative the judgment, much of this improvement must be attributed to sulfapyridine.

Summary

1. Mortality statistics of 1,894 cases of pneumonia are presented, including 992 pneumococcal pneumonias. A definite

improvement in death rate during an eighteen-year period is demonstrated.

2. Changes in management and treatment during this period are discussed, with charts showing the more extensive use of laboratory facilities.

3. One hundred and forty-five cases treated with antipneumococcus serum are presented. Statistical study shows that not until 1935 could the results of serum treatment at the Nassau Hospital be considered satisfactory.

4. Factors influencing the improved mortality rate are discussed. Whereas serum therapy, improved oxygen therapy, and less medication (digitalis and morphine) are important, factors such as earlier hospitalization, the hospitalization of more mild cases, and public health education appear more important.

5. The first year, 1939, in which sulfapyridine was used, shows a marked improvement in mortality, the rate dropping to 5.8 per cent.

References

1. Bullowa J. G. M. *The Management of the Pneumonias*. New York: Oxford University Press, p. 24.
2. Finland M., and Brown John W. *Am. J. Med. Sc.* 192 155 No. 2 (Feb.) 1939.
3. Rogers E. S. and Gooch M. E. *New York State J. Med.* 38 1369 No. 21 (Nov. 1) 1938.
4. Cecil Russell L. *Bull. New York Acad. Med.* 15 111 No. 2 (Feb.) 1939.

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF ORAL DIAGNOSIS

The program of the two-day Congress of the American Association for the Advancement of Oral Diagnosis to be held at The New York Academy of Medicine Building, 2 East 103rd Street, New York City, on October 17-18, 1940, will be on the press when you read this announcement. This Congress will come during the Graduate Fortnight of the Academy.

Prominent members of the dental and medical professions will participate in the programs as clinicians, essayists and discussers covering subjects of common and practical interest to members of both professions.

A dentomedical exhibit on oral and physical

diagnosis will be presented during the meeting, stressing the significance of early and correct diagnosis in the field of prevention and the importance of periodic examinations, enabling those who visit the exhibit to obtain important and practical suggestions that can be applied in the everyday practice of dentistry and medicine. Members of both professions who are in good standing in their respective organizations are eligible for membership.

For further information relative to program, exhibits, membership, organizing of regional divisions, etc., communicate with the secretary H. Justin Ross, 515 Madison Avenue, New York.

ONE IN TWENTY

Recent figures obtained by the American Social Hygiene Association show that one in twenty people, taking the population as a whole, is infected with syphilis. The venereal diseases still far outnumber all other serious infectious diseases. Further, the legal staff studied medi-

cal quackery in forty-four cities in twenty-five states—the Association realizing that the progress of the antisiphilis campaign was being seriously impeded by all sorts of medical quacks, charlatans, herbalists, and nostrum dispensers.

Thirty-Fourth Annual Meeting of the First District Branch

PROGRAM



Wednesday, October 9, 1940
St. Luke's Hospital, New York City

Foreword

Due to the kind cooperation of Dr Albert H Aldridge, the obstetric and gynecologic part of this program will be held at the Woman's Hospital, 141 West 109th Street, New York City

Members will kindly use the *main* entrance at both St. Luke's and Woman's hospitals from where they will be directed to the various clinics

Luncheon will be served at 1 00 P M, Eli White Memorial Building, St Luke's Hospital, 421 West 113th Street.

2 00-2 30 o'clock—Business Meeting—Election of Officers, Auditorium, Eli White Memorial Building

NOTICE to those attending sessions at Woman's Hospital

1 Dr James P Marr will be pleased to demonstrate the Caldwell-Malloy method of x-ray pelvimetry and to show x-ray films of normal and interesting deformed pelvis

2 Guests will be invited to attend any obstetric deliveries that may occur during the hours of the clinic

3 The pathologists will be glad to demonstrate interesting pathologic specimens in the Laboratory, fifth floor, at any time during the afternoon

4 Members of the staff will be pleased to conduct any guests who may be interested through the outpatient department, record department, or the wards of the hospital.

General Surgery

8 00-11 00 o'clock—Operations by Dr William F MacFee, Dr Morris K Smith, Dr Edward J Donovan, Dr Paul Morton, and Dr Benjamin R. Shore

11 00-1 00 o'clock—Clinical presentations by the following staff

1 Repair of Inguinal Hernia by Transplantation of the Cord to the Femoral Canal

2 Case Presentation Adrenal Cortical Tumor
Dr MacFee
Dr Smith

3 Case Presentation Carcinoma of the Colon
Dr Donovan

4 Diagnosis and Treatment of Polyps of the Rectum and Recto Sigmoid
Dr Morton

5 Treatment of Epithelioma of the Face
Dr Shore

6 Infection in Lower Extremities in Diabetes
Dr Solley

7 Demonstration and Discussion of Peritoneoscopy
Dr Heeks

8 Lobectomy for Chronic Pulmonary Suppuration
Dr Ada

9 Spontaneous Choleperitonitis
Dr Berry

10 Review of the Cases of Carcinoma of the Stomach Over Past Ten Years
Dr Wearn

11 Recurrent Hyperthyroidism
Dr Eckerson

12 Preparation and Use of Parenteral Fluids
—Demonstration of Solution Room
Dr West

Orthopedics

2 00-3 30 o'clock—Operative Clinic—Dr Mather Cleveland and staff

3 30-5 00 o'clock—Clinical Demonstrations

1 Surgical Treatment of Fracture of the Neck of Femur
Dr Mather Cleveland

2 Surgery of Internal Derangement of Knee Joint
Dr Edward Winant

3 Surgical Treatment of Backache
Dr Fred Thompson

4. Repair of Ruptured Supraspinatus Tendon
Dr David Bosworth

General Medicine

10 30-12 00 o'clock—Ward Rounds—Division A, Dr G Goodwin and staff, Division B, Dr F W Bishop and staff

Round Table Conferences

2 30 o'clock

1 Diseases of the Thyroid Gland
Dr George Goodwin

2 Diabetes Mellitus
Dr James R Scott

3 Allergy
Dr William Thomas

4 Diseases of the Chest
Dr Oswald Jones and Dr Philip Bishop

5 Gastroscopy—Demonstration and Discussion
Dr William G Heeks and Dr William Gibb

Visit Our Medical Library—Fourth floor
Exhibit—"Old St Luke's"—Miss Lempke

Pediatrics

10 00-12 00 o'clock—Ward Rounds—Dr F Elmer Johnson and staff

2.30-4 00 o'clock

1 The Enlarged Thymus
Dr Johnson

2 Celiac Disease
Dr Jackson

3 Neoplastic Disease in Children
Dr Dargone

4 Infant Feeding
Dr Wilke

2 00-4 00 o'clock

Children's Cardiac Clinic in Session in the Outpatient Department
Dr Nicholson

Neurology—Fourth Floor

9:00–9:30 o'clock

"Cachexia (Anorexia) Nervosa"

Dr Irving Pardee

9:30–10:00 o'clock

"Commonsense Approach to the Neuroses"

Dr T J Morrison

10:00–10:30 o'clock

"Treatment of Head Injuries"

Dr P J Buckley

10:30–11 00 o'clock

"Vitamin Disturbances Affecting the Nervous System"

Dr E P Roemer

11:00–11:30 o'clock

"Vascular Disease of the Nervous System"

Dr John McKinney

11:30–12:00 o'clock

"Diagnosis and Treatment of Pituitary Tumors"

Dr Irving Pardee

Otolaryngology

2:00–3:30 o'clock—Operative Clinic—Dr Wesley Bowers and staff

3:30–5 00 o'clock—Ward Rounds—Dr Wesley Bowers (Norrie V)

Clinical Demonstrations 1 Bronchoscopy, 2 Esophagoscopy

Ophthalmology

2:00–3:30 o'clock—Operative Clinic—Dr Guernsey Frey and staff

2:30 o'clock—Clinical Demonstrations—Dr Walter Hipp

1 Probing of Stenosed Lacrymal Duct with the Negative Electrode

2 Treatment of Certain Forms of Conjunctivitis with Bacteriophage and Antipeol

3:00 o'clock—Ward Rounds—Norrie V—Dr G Frey and staff

Urology

8:30–10:00 o'clock—Operative Clinic—Dr Henry G Bugbee and staff

10:30–12:00 o'clock—Ward Rounds (Plant 3)—Dr Henry G Bugbee and staff

Radiotherapy

3:30–4:00 o'clock

'The Importance of Microscopic Diagnosis in Radiotherapy'

Dr Francis Carter Wood

X-Ray Exhibit**Fourth Floor**

Interesting Cases from the Files of X-Ray Department

Dr Eric Ryan and staff

2:30–3:30 o'clock

1 Laminography in Diagnosis Dr Eric Ryan

2 Diagnosis of Intestinal Obstruction with

Miller-Abbott Tube Dr Eric Ryan

Dermatology and Syphilology

4:00–5 00 o'clock

"Recent Advances in the Diagnosis and Treatment of Syphilis"

Dr William B Long

Dr Robert McLaughlin

Pathology

Pathologic Exhibit Dr Francis Carter Wood and Dr Leila Knox

3 00–3 30 o'clock

"Recent Developments in Laboratory Diagnosis"

Dr Leila Knox

Outpatient Clinics in Session—Wednesday

9 30–11:30 o'clock—Gynecology, Surgery, Genitourinary, Children's T.B., Prophylactic Dental, and Emergency Ear, Nose, and Throat.

2 00–3:30 o'clock—Medical (Hematology, Dr Louis Amill, and Arthritis, Dr John S Davis), Diabetes, Dr Hines, Children's Cardiac, and Eye Clinic.

Obstetrics and Gynecology—Woman's Hospital, 141 West 109th Street—Dr. Albert H. Aldridge and Staff

Sims Operating Room

9 00–9 45 o'clock

Cesarean Section

Dr Ralph Barrett

9 45–10:00 o'clock

Management of Patients with Respiratory Infections During Labor Dr Albert H Aldridge

10 00–10 45 o'clock

Operation for Fibroids Dr Ralph A Hurd

10 45–11 00 o'clock

Treatment and Results of Roentgen Therapy for Postpartum Mastitis Dr Harriet McIntosh

11 00–12 00 o'clock

Operation for Laceration Pelvic Floor, Cystocele, Rectocele Dr Edward Bullard

2 00–3:30 o'clock

Operation for Laceration Pelvic Floor, Cystocele and Uterine Prolapse, Vaginal Hysterectomy

Dr Albert H Aldridge

3:30–3 45 o'clock

Treatment of Chronic Endocervicitis and Cervicitis, Demonstration of Electrocoagulation

Dr Ralph Barrett

3 45–5 00 o'clock

Operation for Incontinence of Urine

Dr William T Kennedy

5:00–5:30 o'clock

Insertion of Radium for Carcinoma of Cervix

Dr Geo Gray Ward

First District Branch Officers

President Theodore West, M D, Port Chester

1st Vice-President A N Selman, M D, Spring Valley

2nd Vice-President M R. Bradner, M D, Warwick

Secretary I J Landsman, M D, New York City

Treasurer Howard C Taylor, Jr, M D, New York City

Presidents of Component County Societies

Bronx Joseph Golomb M D, New York City

Dutchess Gilbert S Tabor, M D, Poughkeepsie

New York Walter P Anderton, M D, New York City

Orange Daniel I O'Leary, M D, Newburgh

Putnam Robert S Cleaver, M D Brewster

Richmond Herbert A Cochrane, M D, New Brighton

Rockland Russell E Blaisdell, M D, Orangeburg

Westchester Henry J Vier, M D, White Plains

THE NEW YORK ACADEMY OF MEDICINE

Annual Graduate Fortnight

October 14 to October 25, 1940

SUBJECT OF THE FORTNIGHT "INFECTIONS"

MORNING—PANEL DISCUSSIONS—10 TO 12 O'CLOCK—HOSACK HALL

Tuesday, October 15
Chemotherapy in Infections
PERRIN H. LONG, *Chairman*

Thursday, October 17
Osteomyelitis and Bacterial Infection of Joints
FREDERIC W. BANCROFT, *Chairman*

Tuesday, October 22
Relation of Vitamins to Infection
T. T. MACKIE, *Chairman*

Thursday, October 24
Infections in Children
ALEXANDER T. MARTIN, *Chairman*

AFTERNOON—HOSPITAL CLINICS

2 00 to 5 00 p.m.

First Week

- | | |
|------------------------------|-----------------------------|
| <i>Monday, October 14</i> | 6 Manhattan Eye and Ear |
| 1 Bellevue | 7 St. Luke's |
| 2 Beth Israel | |
| <i>Tuesday, October 15</i> | <i>Thursday, October 17</i> |
| 3 Flower & Fifth Avenue | 8 Morrisania |
| 4 Lincoln | 9 New York |
| <i>Wednesday, October 16</i> | <i>Friday, October 18</i> |
| 5 Beckman Street | 10 Post Graduate |
| | 11 Woman's |

Second Week

- | | |
|------------------------------|------------------------------------------|
| <i>Monday, October 21</i> | 17 Presbyterian (Sloane) |
| 12 Lenox Hill | <i>Thursday, October 24</i> |
| 13 Polyclinic | 18 Harlem |
| <i>Tuesday, October 22</i> | 19 Ruptured & Crippled |
| 14 Mount Sinai | <i>Friday, October 25</i> |
| 15 Roosevelt | 20 Babies |
| <i>Wednesday, October 23</i> | 21 Presbyterian (Neurological Institute) |
| 16 New York Eye and Ear | Many cases will be shown at each clinic. |

EVENING SESSIONS—AT THE ACADEMY OF MEDICINE—8.30 O'CLOCK

Monday, October 14

Friday, October 18

- I. ADDRESS OF WELCOME**
MALCOLM GOODRICH, President The New York Academy of Medicine
- II. SCIENTIFIC PROGRAM**
- The Ludwig Kaat Lecture: Experimental basis of chemotherapy in the treatment of bacterial infections
E. K. MARSHALL, JR., Professor of Pharmacology and Experimental Therapeutics, Johns Hopkins University School of Medicine
 - The Wesley M. Carpenter Lecture: Clinical bacterial-chemotherapy, results obtained and dangers encountered
PERRIN H. LONG, Professor of Preventive Medicine, Johns Hopkins University School of Medicine

- Infections of the urinary tract
GEORGE P. CARHILL, Professor of Urology, College of Physicians and Surgeons, Columbia University
- Gonococcal infections in the female
ROBERT M. LEWIS, Associate Clinical Professor of Obstetrics and Gynecology, Yale University School of Medicine
- Gonococcal infections in the male
P. S. PELOUZE, Assistant Professor of Urology, University of Pennsylvania

Monday, October 21

- Tuesday, October 15**
- General consideration of bacterial infections
EMANUEL LIGMAN, Consulting Physician, The Mount Sinai Hospital
 - Recent advances in knowledge of streptococcal infections
WILLIAM S. TILLET, Professor of Medicine, New York University College of Medicine

- Infections of mouth, pharynx and upper respiratory tract
JOHN D. KERNAN, Professor of Otolaryngology, College of Physicians and Surgeons, Columbia University
- Infections of middle ear and nasal sinuses
WESLEY C. BOWERS, Surgical Director of Otolaryngology, St. Luke's Hospital
- Infections of teeth and surrounding structures
CHARLES G. DARLINGTON, Professor of Pathology, New York University College of Dentistry

Tuesday, October 22

- Wednesday, October 16**
- The prevention and treatment of infection in wounds both operative and accidental
FRANK L. MCELRENEY, Associate Professor of Clinical Surgery, College of Physicians and Surgeons, Columbia University
 - Osteomyelitis and pyogenic infections of joints
MATTHEW CLEVELAND, Orthopedic Surgeon, St. Luke's Hospital

- Puerperal infections
WILLIAM E. STUDDIFORD, Professor of Obstetrics and Gynecology, New York University College of Medicine
- Treatment of infections by methods other than chemotherapy
WILLIAM TRALINGER, Director, Manhattan Co. venereal Serum Laboratory, Department of Health

Wednesday, October 23

- Thursday, October 17**
- Epidemic influenza
THOMAS FRANCIS, JR., Professor of Bacteriology, New York University College of Medicine
 - Pneumococcal and virus pneumonias
HOBART A. REIMANN, M.D., Professor of Practice of Medicine and Clinical Medicine, The Jefferson Medical College
 - Bacterial meningitis
H. E. ALEXANDER, Department of Diseases of Children, Columbia University

- Virus infections
THOMAS M. RIVERS, Director, Hospital of The Rockefeller Institute for Medical Research
- Acute poliomyelitis
JOHN R. PAUL, Professor of Preventive Medicine, Yale University School of Medicine

Thursday, October 24

- Undulant fever
WALTER M. SIMPSON, Director, Kettering Institute

October 1, 1940]

ANNUAL GRADUATE FORTNIGHT

1473

- for Medical Research The Miami Valley Hospital,
Dayton, Ohio
2. Rickettsial diseases
GEORGE BLUMER, David P Smith Clinical Pro-
fessor of Medicine Emeritus Yale University
3. Lymphogranuloma venereum
ARTHUR W GRACE Professor of Dermatology and
Syphilology Long Island College of Medicine

Friday, October 25

1. Epidemic encephalitis
RALPH S MUCKENFUSS Director of Bureau of
Laboratories Department of Health

2. Newer conceptions of postinfectious and related
forms of encephalitis
TRACY J PUTNAM Professor of Neurology and
Neurosurgery College of Physicians and Sur-
geons Columbia University
3. Some of the common contagious diseases
PHILIP M STIMSON Associate Professor of Clinical
Pediatrics Cornell University Medical Col-
lege
4. Concluding remarks
HARRISON S MARTLAND, Chairman Fortnight
Committee

UNITED STATES CIVIL SERVICE COMMISSION, WASHINGTON, D C

Applications will be received until further notice at the War Department for CIVILIAN MEDICAL OFFICERS (temporary and part-time) For full-time duty the salary is \$3,200 a year or higher, for part-time duty, the salary is commensurate with the hours of duty

Because of the immediate authorized expansion of the Army, there will be need for approximately 600 civilian medical officers in various grades for temporary service and part-time service, to perform at this time duties which will later be performed by Commissioned Officers of the Medical Reserve Corps, if and when such officers are appointed to active duty The duration of the appointments is indefinite, and appointees are not receive commissions in the Army Appointees will not be eligible for permanent appointments as a result of this announcement Appointments will be made for duty in army hospitals, reception centers, and other field stations throughout the United States Appointment to part-time positions will be made of persons residing in the vicinity of the place of duty

DUTIES—*Full-time*—With responsibility corresponding with the grade, appointees will act as doctors of medicine in active practice in hospitals in dispensaries and in the field

Part time—To report for sick call at a fixed hour each day and be subject to call for emergency at all times Part-time appointees will be able to continue their regular practice

Qualified persons are urged to apply at once as a large number of appointments may be made to these positions

APPLICANTS MUST POSSESS THE FOLLOWING QUALIFICATIONS

1. They must be citizens of the United States on the date of receipt of application Foreign-born applicants who meet the citizenship requirement must furnish proof of United States citizenship before they will be eligible for appointment under civil service rules
2. Education.—They must have been graduated from a medical school of recognized (Class A) standing with the degree of M D, or from a foreign medical school

whose graduates are admitted to the examinations of the National Board of Medical Examiners

3. Experience.—They must have had at least 1 year internship, general or 1 year in a special branch For appointment as Senior Medical Officer at \$4,600 and Medical Officer at \$3,800, applicants must have had in addition experience in the active practice of medicine commensurate in length and quality with the responsibilities of these positions

APPLICANTS MUST FILE WITH THE UNITED STATES CIVIL SERVICE COMMISSION, WASHINGTON, D C, Application Form 2398-a, properly executed

Application Forms—The necessary forms may be obtained from the Secretary, Board of United States Civil Service Examiners, at any first- or second-class post office, from the United States Civil Service Commission, Washington, D C, or from the United States Civil Service office at any of the cities given below (the title of the position desired should be stated)

Atlanta Ga, New Post Office Building
Boston, Mass, Post Office and Courthouse Building
Chicago, Ill, New Post Office Building
Cincinnati, Ohio, Post Office and Courthouse.
Denver Colo, Post Office Building
New Orleans La Customhouse
New York, N Y, Federal Building, Christopher Street.
Philadelphia, Pa, Customhouse, Second and Chestnut Streets
Seattle, Wash, Federal Office Building
St. Louis Mo New Federal Building
St. Paul, Minn., Post Office and Customhouse.
San Francisco, Calif, Federal Office Building
Honolulu, T H, Federal Building

Balboa Heights, Canal Zone, Secretary Board of United States Civil Service Examiners
San Juan P R, Chairman Puerto Rican Civil Service Commission.

Issued August 31, 1940

TOO BAD

There is cause to regret Bernard Macfadden's elimination in the Florida senatorial primaries We were anticipating the sight of the entire Senate doing setting up exercises after opening prayers and the appearance of unbulled barley on the Senate restaurant menu

"—

BLOOD WILL TELL"

"The identification tag that every soldier in the German army must wear around his neck will henceforth indicate the blood group to which he belongs (information necessary for blood transfusions)" the regular Berlin correspondent of the *Journal of the American Medical Association* reports

International Medical Assembly of the Inter-State Postgraduate Medical Association of North America

THE twenty-fifth International Assembly of the Inter-State Postgraduate Medical Association of North America will be held in the Public Auditorium in Cleveland, on October 14, 15, 16, 17, and 18, 1940. Preassembly clinics will be held October 12 and postassembly clinics on October 19.

All members of county, state, national, provincial, and dominion societies (component parts of the American and Canadian medical associations) and all medical men and women, in good standing (vouched for by members of the Academy of Medicine of Cleveland and the Cuyahoga County Medical Society), are privileged to register and attend the Assembly.

All members of the dental profession, in good standing in their respective county, state, and national societies, are cordially invited to attend, and will be privileged to register.

The usual registration fee of \$5.00 will be collected of all except guests of the Association and Life Members. The privilege of registration will be extended to all medical officers of the Army, Navy, Marine Corps, and Veteran's Bureau, and to full time medical officers of national, state, county, and city public health services, upon presentation of proper credentials and the payment of the registration fee.

PROGRAM

Monday, October 14

8 00 A.M.

Diagnostic Clinic 'Surgical Management of Recurrent Hyperthyroidism'
Dr. Richard B. Cattell, Lahey Clinic Boston.

Diagnostic Clinic 'Types and Treatment of Chronic Nephritis'
Dr. John Musser, Professor of Medicine, Tulane University School of Medicine, New Orleans.

Diagnostic Clinic 'Treatment of Bronchiectasis.'
Dr. John Alexander, Professor of Surgery, University of Michigan School of Medicine, Ann Arbor, Mich.

Intermission for Review of Exhibits

Diagnostic Clinic 'Adrenal Insufficiency and the Use of Synthetic Adrenal Cortical Hormone.'
Dr. George W. Thorn, Associate Professor of Medicine, Johns Hopkins University School of Medicine, Baltimore.

Diagnostic Clinic 'Prevention of Deformities in Arthritis'
Dr. Loring T. Swaim, Boston.

Dr. Loring T. Swaim, Boston.

Noon Intermission

1 00 P.M.

Diagnostic Clinic 'Surgical Treatment of Peptic Ulcer'
Dr. William F. Rienhoff, Associate Professor of Surgery, Johns Hopkins University School of Medicine, Baltimore.

Diagnostic Clinic 'Clinical Types of Pituitary Disease'
Dr. David P. Barr, Busch Professor of Medicine, Washington University School of Medicine, St. Louis.

Address 'Postoperative Management of the Surgical Patient'
Dr. Frederick A. Collier, Professor of Surgery, University of Michigan School of Medicine, Ann Arbor, Mich.

Address 'Some Observations on the Nature of Acute Nephritis.'
Dr. John P. Peters, John Slade Ely Professor of Medicine, Yale University School of Medicine, New Haven Conn.

Intermission for Review of Exhibits

Address 'The Hazards of Pregnancy and Labor in the Grande Multipara'
Dr. Nicholson J. Eastman, Professor of Obstetrics, Johns Hopkins University School of Medicine, Baltimore.

Address 'Recent Advances in Chemotherapy'
Dr. Chester S. Keefer, Wade Professor of Medicine, Boston University School of Medicine, Director Evans Memorial Physician-in-Chief, Massachusetts Memorial Hospitals Boston.

Address 'Treatment of Wounds'
Dr. Frederick Christopher, Associate Professor of Surgery, Northwestern University School of Medicine, Evanston, Ill.

Address 'The Interpretation and Treatment of Spells of Unconsciousness in Medical and Surgical Practice.'
Dr. Soma Weiss, Hersey Professor of the Theory and Practice of Physics, Harvard Medical School Boston.

Address 'Surgery of Hypoglycemia with Special Reference to Resection of the Pancreas.'
Dr. Vernon C. David, Clinical Professor of Surgery, Rush Medical College Chicago.

Address 'Encephalopathies in Children.'
Dr. Bronson Crothers, Assistant Professor of Pediatrics, Harvard University Medical School Boston.

Address 'The Immediate Treatment of Head Injuries.'
Dr. Donald Munro, Assistant Professor of Neurological Surgery, Harvard University Medical School Boston.

Address 'Intestinal Absorption as a Clinical Physiological Problem'
Dr. Maurice B. Visacher, Professor of Physiology and Head of the Department, University of Minnesota Medical School Minneapolis.

Dinner Intermission

7 00 P.M.

Address 'The Interpretation and Treatment of Spells of Unconsciousness in Medical and Surgical Practice.'
Dr. Soma Weiss, Hersey Professor of the Theory and Practice of Physics, Harvard Medical School Boston.

Address 'Surgery of Hypoglycemia with Special Reference to Resection of the Pancreas.'
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Dr. Bronson Crothers, Assistant Professor of Pediatrics, Harvard University Medical School Boston.

Address 'The Immediate Treatment of Head Injuries.'
Dr. Donald Munro, Assistant Professor of Neurological Surgery, Harvard University Medical School Boston.

Address 'Management of Pelvic Inflammatory Disease'
Dr. John R. Fraser, Professor of Obstetrics and Gynecology, McGill University Faculty of Medicine, Montreal Canada.

Address 'Common Errors in Cardiac Diagnosis.'
Dr. A. Carlton Earnate, Head of the Cardiorespiratory Department, Cleveland Clinic, Cleveland.

Tuesday, October 15

8 00 A.M.

Diagnostic Clinic 'The Use of Testosterone Propionate in Male Hypogonadism'
Dr. E. Perry McCullagh, Cleveland Clinic Cleveland.

Diagnostic Clinic 'Special Problems in the Nutrition of Children'
Dr. Henry J. Gerstenberger, Professor of Pediatrics, Western Reserve University School of Medicine Cleveland.

Diagnostic Clinic 'Immediate Treatment of Burns'
Dr. Donald M. Givner, Associate Clinical Professor of Surgery, Western Reserve University School of Medicine Cleveland.

Intermission for Review of Exhibits

Diagnostic Clinic 'Puzzling Cases of Abdominal Pain.'
Dr. Walter C. Alvarez, Professor of Medicine, University of Minnesota Graduate School of Medicine Mayo Clinic Rochester Minn.

Diagnostic Clinic 'Fractures of the Neck of the Femur'
Dr. William R. Cubbins, Clinical Professor of Bone and Joint Surgery, Loyola University School of Medicine Chicago.

Noon Intermission

October 1, 1940]

INTERNATIONAL MEDICAL ASSEMBLY

1475

1 00 P M
Deficiency Syndromes Commonly
Seen in America.
Dr James S. McLester, Professor of Medicine, University of Alabama School of Medicine, Birmingham Ala.

Diagnostic Clinic Surgery of the Pancreas.
Dr. Waltman Walters Professor of Surgery University of Minnesota Graduate School of Medicine Mayo Clinic, Rochester Minn.

Address Medical and Surgical Aspects of the Obstructing Prostate.
Dr. Hugh H. Young, Professor of Urology Johns Hopkins University School of Medicine Baltimore.

Address Protruded Intervertebral Disc.
Dr. Howard C. Ruffner, Professor of Surgery University of California School of Medicine, San Francisco

Intermission for Review of Exhibits
Address Allergic and Non-Allergic Treatment of Asthma.
Dr. Warren T. Vaughan, Vaughan Graham Clinic Richmond Va.

Address Tumors of the Kidney in Children.
Dr. Herman L. Kretschmer, Clinical Professor of Surgery (Genito-Urinary) Rush Medical College, Chicago

Address Cancer of the Stomach.
Dr. Howard E. Gray, Assistant Professor of Surgery University of Minnesota Graduate School of Medicine Mayo Clinic Rochester Minn.

Address Pneumonia.
Dr. Gerald S. Shibley, Associate Clinical Professor of Medicine, Western Reserve University School of Medicine Cleveland.

Dinner Intermission

7 00 P M

Address The Treatment of Vesico-Colonic Fistula.
Dr. Charles W. Mayo, Assistant Professor of Surgery University of Minnesota Graduate School of Medicine Mayo Clinic, Rochester Minn.

Address General Problems of Old Age.
Dr. Lewis F. Barker, Professor Emeritus of Medicine, Johns Hopkins University School of Medicine Baltimore.

Address Coronary Artery Disease.
Dr. Roy W. Scott, Professor of Clinical Medicine Western Reserve University Medical School Cleveland.

Address Modern Treatment of Scoliosis.
Dr. Alan deForest Smith, Clinical Professor of Orthopedic Surgery Columbia University, College of Physicians and Surgeons New York City

Address The Treatment of Acute Traumatic Intracranial Hemorrhage.
Dr. Eric Oldberg, Professor and Head of the Department of Neurology and Neurological Surgery University of Illinois College of Medicine Chicago

Address and Movie Successful Defibrillation of the Human Ventricles the Establishment of a Resuscitation Squad in our Hospitals.
Dr. Claude S. Beck, Associate Professor of Surgery Western Reserve University School of Medicine Cleveland.

Wednesday, October 16

8 00 A.M.

Diagnostic Clinic Pre-Symptom Tuberculosis
Dr. Raymond C. McKay Assistant Clinical Professor of Medicine Western Reserve University School of Medicine Cleveland.

Diagnostic Clinic Cancer of the Rectum.
Dr. Thomas E. Jones, Cleveland Clinic, Cleveland

Diagnostic Clinic The Various Forms of Edema with the Mechanism of Production and Treatment.
Dr. Hajo F. Volini, Clinical Professor of Medicine, Loyola University School of Medicine Chicago

Intermission for Review of Exhibits
Diagnostic Clinic Hernia
Dr. W. Wayne Babcock, Professor of Surgery and Clinical Surgery Temple University School of Medicine Philadelphia.

Diagnostic Clinic Diagnosis and Management of Hepatocellular Jaundice.
Dr. Henry L. Bockus, Professor of Gastro Enterology University of Pennsylvania Graduate School of Medicine, Philadelphia.

Noon Intermission

1 00 P M.
Contact Dermatitis and Its Differentiation.

Dr. Frank C. Knowles, Professor of Dermatology Jefferson Medical College Philadelphia.

Diagnostic Clinic Cont.
Dr. Russell L. Haden, Cleveland Clinic, Cleveland.

Address Surgery of the Gallbladder and the Bile Ducts
Dr. Roscoe R. Graham, Assistant Professor of Surgery University of Toronto Faculty of Medicine, Toronto Canada.

Address Esophagology in Relation to General Medicine.
Dr. Chevalier Jackson, Honorary Professor of Broncho-esophagology Temple University School of Medicine, Philadelphia

Dr. Chevalier L. Jackson, Professor of Broncho-esophagology Temple University School of Medicine, Philadelphia.

Intermission for Review of Exhibits
Address Common Errors in the Selection of Patients for Surgery
Dr. Irvin Abell, Clinical Professor of Surgery, University of Louisville School of Medicine, Louisville Ky

Address Polymyelitis Early Diagnosis and Treatment.
Dr. John A. Toomey, Associate Professor of Pediatrics Western Reserve University School of Medicine Cleveland.

Address Endocrine Factors in Gynecological Disease.
Dr. Otto H. Schwarz, Professor of Clinical Obstetrics and Gynecology, Washington University School of Medicine St. Louis.

Address The Management of the Acute Abdomen in Children.
Dr. Charles H. Phifer, Professor of Surgery University of Illinois School of Medicine, Chicago

Assembly Dinner

For members of the profession their ladies and friends—informal
7 00 P M.

Dr. Chevalier Jackson, President of the Inter-State Postgraduate Medical Association of North America—Master of Ceremonies.

Addresses by
Dr. Ross T. McIntire, Surgeon General United States Navy Washington D C.
Dr. Nathan B. Van Etten, President, American Medical Association New York City
Dr. William M. Skipp, President, Ohio State Medical Association Youngstown O
Dr. Charles T. Way, President Academy of Medicine of Cleveland and Cuyahoga County Medical Society Cleveland.

Other distinguished citizens.

Thursday, October 17

8 00 A.M.

Diagnostic Clinic Removal of Right Cerebral Hemisphere for Infiltrating Glioma.
Dr. Louis Karnosh, Associate Clinical Professor of Nervous Diseases Western Reserve University School of Medicine Cleveland

Dr. W. James Gardner, and
Cleveland Clinic Cleveland, Chief of Neurosurgery

Diagnostic Clinic Medical and Surgical Aspects of Chronic Ulcerative Colitis.
Dr. Henry Care, Assistant Clinical Professor of Surgery Columbia University College of Physicians and Surgeons New York City

Dr. Thomas Mackie, Assistant Clinical Professor of Medicine Columbia University, College of Physicians and Surgeons New York City

Diagnostic Clinic Obesity
Dr. Robert W. Keeton Professor of Medicine University of Illinois College of Medicine Chicago

Intermission for Review of Exhibits
Diagnostic Clinic Diverticulitis
Dr. Claude F. Dixon, Associate Professor of Surgery University of Minnesota Graduate School of Medicine Mayo Clinic Rochester Minn.

Diagnostic Clinic Gold Therapy in Rheumatoid Arthritis

Dr Russell L Cecil, Professor of Clinical Medicine
Cornell University Medical College, New York
City

Noon Intermission

1 00 P M

Diagnostic Clinic 'Surgical Treatment of Peripheral Vascular Disease'

Dr Alfred W Adson, Professor of Neurosurgery,
University of Minnesota Graduate School of Medicine,
Mayo Clinic Rochester Minn

Diagnostic Clinic 'Diagnosis and Treatment of Myxedema.'

Dr Cyrus C Sturgis, Professor of Internal Medicine,
University of Michigan School of Medicine, Ann
Arbor, Mich

Address 'Acute Surgical Abdomen'

Dr Elliott C Cutler, Moseley Professor of Surgery,
Harvard University Medical School Boston.

Address 'Infections of the Urinary Tract.'

Dr William F Braasch, Professor of Urology, University of Minnesota Graduate School of Medicine,
Mayo Clinic, Rochester, Minn

Intermission for Review of Exhibits

Address 'Malignancy of the Colon'

Dr Chas Gordon Heyd, Clinical Professor of Surgery
New York Postgraduate Medical School, New
York City

Address 'Relationship of Ophthalmology to Systemic Disease.'

Dr William L Benedict, Professor of Ophthalmology,
University of Minnesota Graduate School of Medicine
Mayo Clinic Rochester Minn

Address 'Clinical Report and Evaluation of Low Temperature in Treatment of Cancer'

Dr Temple Fay, Professor of Neurology and Neurosurgery, Temple University School of Medicine,
Philadelphia.

Address 'Choice of Anesthesia'

Dr John S Lundy, Professor of Anesthesia University of Minnesota Graduate School of Medicine
Mayo Clinic Rochester Minn

Dinner Intermission

7 00 P M

Address 'Treatment of the Menopause.'

Dr Elmer Seyringhaus, Professor of Medicine University of Wisconsin School of Medicine Madison,
Wis

Address 'Physiological and Clinical Aspects of Intubation of the Small Intestine.'

Dr W Osler Abbott, Philadelphia.

Address 'Surgical Aspects of Gastro-Intestinal Hemorrhage.'

Dr Eldridge L Eliason, John Rhea Barton Professor of Surgery University of Pennsylvania School of Medicine, Philadelphia, and

Dr Julian Johnson, Philadelphia

Address 'Treatment of Luetie Aortitis.'

Dr James E Panlila, Professor of Clinical Medicine,
Emory University School of Medicine, Atlanta Ga.

Address 'Benign Lesions of the Neck.' (Slides)

Dr Robert S Dinwiddie, Cleveland Clinic Cleveland.

Friday, October 18

8 00 A.M.

Diagnostic Clinic 'Leukemia, Diagnosis, and Treatment.'

Dr Claude E Forkner, Assistant Professor of Clinical Medicine, Cornell University School of Medicine
New York City

Diagnostic Clinic 'Shoulder Joint Injuries.'

Dr John J Moorhead, Professor of Clinical Surgery
New York Postgraduate Medical School New
York City

Diagnostic Clinic 'Diseases of the Aorta.'

Dr Wallace M Yater, Professor of Medicine and Director of the Department Georgetown University
School of Medicine Washington, D C.

Intermission for Review of Exhibits

Diagnostic Clinic 'Diabetes Its Complications'

Dr Elliott P Joslin, Clinical Professor of Medicine,
Harvard University Medical School Boston.

Diagnostic Clinic 'Surgery of the Esophagus.'

Dr Frank H. Lahey, Lahey Clinic Boston.

Noon Intermission

1 00 P.M.

Diagnostic Clinic '"Special Problems in Surgery of the Aged Patient,"'

Dr George Crile, Sr and Dr George Crile, Jr.
Cleveland Clinic Cleveland

Diagnostic Clinic 'Tumors of the Breast.'

Dr John F Erdmann, Attending Surgeon, New York
Postgraduate Medical School New York City

Diagnostic Clinic 'Treatment of Pernicious Anemia'

Dr George R. Minot, Professor of Medicine, Harvard
University Medical School Boston

Intermission for Review of Exhibits

Address 'The Modern Treatment of Congestive Heart Failure.'

Dr George Herrmann, Professor of Clinical Medicine,
University of Texas School of Medicine, Galveston,
Tex.

Address 'Pathological Lesions of the Larynx.'

(Colored Movie)

Dr Dean M. Lierle, Professor and Head of the Department of Otolaryngology State University of
Iowa College of Medicine, Iowa City

Address 'Herniated Nucleus Pulposus Its Symptoms and Diagnosis'

Dr Bernard H. Nichols, Cleveland Clinic, Cleveland.

THE TRAILER GOES MEDICAL

The horse and buggy, symbol of the country doctor in years past, has been forsaken, and in its place is an air-conditioned trailer, complete with operating table, sterilizing apparatus, x-ray machine, and Pullman-type beds. Dr J D Love, of Ysleta, Texas, described his streamlined facilities to delegates to the American Congress on Obstetrics and Gynecology, meeting in Cleveland.

"I took to trailers three years ago," Dr Love said. "Frankly, I'm a regular country doctor and cover a radius of some fifty-four miles. I deliver an average of a baby a day. The trailer certainly has made it easier for me and I think enables me to do a better job."

Love said his present trailer is his third. It contains all the vital equipment necessary to rural practice, including a special generator to furnish electricity, a refrigerator, and an oxygen supply.

WITHIN ONE GENERATION!

"Within one generation the shadow of syphilis can be lifted from our children if the mothers of America cooperate wholeheartedly and if the health agencies are allowed to use, to the fullest extent, modern weapons to fight syphilis," Dr R A Vonderlehr, assistant surgeon general of the United States Public Health Service said in observance of Child Health Day.

Every year more than 25,000 babies die of syphilis either at or before birth or within the first year of life. About 60,000 more babies are born alive but are infected with the pale germs of syphilis.

To meet this "challenge of syphilis to our children," Dr Vonderlehr urged intense activity at three points: (1) education about the facts for everyone, (2) location of every case of syphilis, by utilizing the full value of the blood test, (3) adequate treatment for every case of syphilis.

Medical News

Is Syphilis Becoming Less Prevalent Upstate?

THE total number of cases of syphilis reported in New York State, exclusive of New York City, in 1939 was 2,292 less than in 1938, a drop of 13.8 per cent, reports *Health News*. This reduction during a period in which case-finding facilities have been better than ever before and in which the use of diagnostic and treatment facilities has increased markedly is believed to indicate an actual decrease in the prevalence of syphilis upstate.

The decline in early acquired cases is of particular interest. The number reported last year was only 1,081, fewer by 625 or 52 per cent than in the preceding year. Since the inauguration of the syphilis control program in 1936, the total number of cases, congenital and acquired, has dropped 21.8 per cent. Congenital cases de-

creased 16.8 per cent and the early cases, or those less than one year of age, 16.3 per cent.

The prevalence of syphilis, indicated by the total number of cases reported, was highest among persons between the ages of 25 and 29 years. A total of 1,735 cases (411 per 100,000 population) was recorded in subsequent five-year age groups up to the 45 to 49 classification in which there was a sharp rise with a still higher prevalence in the 50 to 54 classification followed by another decline. This secondary rise in prevalence in older people is particularly interesting in the light of supporting data accumulated through serologic surveys in various parts of the United States and may be indicative of an epidemic of syphilis several years ago.

No Outbreaks in Army Maneuver Areas

NO EPIDEMICS or outbreaks of disease were reported as having occurred in communities in the northern part of the state during the army maneuvers in August, due largely to the cooperation on the part of state, local, and army authorities, restaurant owners, hotel proprietors, and others. This is an excellent record, remarks *Health News*, considering the fact that the maneuvers brought an estimated 85,000 soldiers to the northern area as well as hundreds of civilian visitors.

Sanitary engineers of the Division of Sanitation of the Department, inspected 1,698 places where food and drink were dispensed and where overnight accommodations were offered. Of the 1,135 inspected, 1,135 had one or more unsatisfactory conditions relating to water, milk, toilets, sewage disposal, dishwashing, food storage,

and general sanitary conditions, making it necessary to reinspect those establishments. As a result of these inspections, 1,317 defects were corrected before the maneuvers actually began.

The entire program was carried on by the Department at the request of army officials through the office of the Surgeon General of the United States Public Health Service. Funds were made available from Social Security.

In order to protect visitors and soldiers on leave, strict sanitary control was maintained over the general sanitation and conditions of cleanliness in restaurants, luncheonettes, diners, roadside stands, taverns, filling stations, hotels, tourist camps, tourist homes and all other establishments where food and drink were dispensed or where visitors were likely to be provided with room accommodations.

County News

Bronx County

A Bronx physician has notified the office of the county society of a fraudulent insurance concern which extracts a fee of \$7.00 from its victims and gives them a list of doctors it falsely alleges will make a medical examination for \$1.00. Attempts to locate the concern have been futile, and physicians are warned in the county *Bulletin* not to "fall" for the swindle.

Dr. Joseph W. Droogan, who died on August 27, formerly contributed, under the pen name of Tamarack, frequent articles to newspapers on sports, particularly on surf and fresh-water fishing. He was 71 years old and had practiced medicine in the Bronx for forty-five years. He was attending physician for forty years at the old Catholic Protectory in the Bronx, which is now the site of the Parkchester housing development.

Delaware County

At the meeting of the Medical Society of the County of Delaware in Delhi on August 20, Dr. James Greenough and Dr. LeRoy House, of

Oneonta, spoke to the members concerning the setup of the tumor clinic which is being held weekly at the Fox Hospital in Oneonta and is available to the patients of the profession in this county. Dr. House spoke about some of the types of cases so far seen and the results obtained, and Dr. Greenough gave a general résumé of types and incidence of cancer and the relative effectiveness of the use of radio therapy and surgery.

In the business meeting following military preparedness was discussed, at which time the secretary reported on the Secretaries' Conference and read the statement of policy of the State Society.—Reported by O. Q. Flint, M.D., Secretary.

Erie County

Dr. Norton H. Good of Buffalo, was drowned on August 24 when his fishing boat overturned in Lake Erie, near the Canadian shore. Dr. Good, aged 62, was a prominent otolaryngologist and had practiced medicine in Buffalo for thirty-five years.

Greene County

A special meeting of the Greene County Medical Society was held in the Greene County Memorial Hospital on August 29 to make plans for medical preparedness

Kings County

The fall scientific meeting and outing of the Associated Physicians of Long Island was held on October 1, at the Wheatley Hills Golf Club, East Williston, Long Island, with a short, interesting scientific program provided by Nassau members

Golfers enjoyed the golf course at this Club, one of the finest on the Island, and a delightful dinner was arranged for the evening

Members of the A P L I wishing to present essays in competition for the William Browning prize of \$50 in cash should send their essays to the William Browning Prize Committee of the A P L I, 1313 Bedford Ave., Brooklyn.

All essays must be typewritten in double-spaced copy. Competing essays must not be signed but must be distinguished by a motto and accompanied by a sealed envelope bearing the same motto containing the name and address of the writer

Essays must be in before November 1, 1940. The award is to be made at the annual meeting in January, 1941

'We have been informed by some of our members that there are two new rackets in Brooklyn," says the county *Bulletin*

"In the first a well-dressed, rather short, well-looking man has been visiting the offices of otolaryngologists for examination. As the man has enlarged tonsils, he makes arrangements to have them removed in the near future. Just before leaving the man announces that he is a bookmaker and has a very good tip on a horse which is to run the next day. Some of our otolaryngologists have placed a bet with the man, from whom they never heard again.

"We advise all doctors—particularly otolaryngologists—to beware!

"In the second, we have been informed that prescriptions for narcotics on blanks similar to those of members of the county society are appearing in drugstores throughout the various parts of the borough

"We advise all physicians to be very careful into whose hands their prescription blanks fall

"The Narcotic Bureau is making a thorough investigation of this matter"

Dr Ralph C. Williams, Brooklyn orthopedic surgeon, who died on September 3 at the age of 64, was a founder, president, and former concertmaster of the Brooklyn Orchestral Society and a former concertmaster of the Arion Society of New York.

He was for a long time visiting surgeon in the orthopedic division of the Kings County Hospital and also had served on the staff of the Caledonian Hospital in Brooklyn

An accomplished musician, he gave much of his time to his musical interests. He also was a member of the Crescent Athletic Club, the Bergen Beach Gun Club and the Camp Fire Club of America

Lewis County

A meeting to complete plans for a campaign to educate the public as to the necessity of early diagnosis and proper medical attention in pneumonia, which is to be undertaken by the Lewis County Home Bureau this fall under the direction of local medical and health officials and Mrs. Katherine Doyle, home demonstration leader, was held at the Extension Service office on September 5. Dr T. A. Lynch, president of the Lewis County Medical Society, Dr L. M. Campbell, local health officer, Dr Stanley P. Sayer, district health officer, Dr A. F. Rotsztein, representing the state health department, and representatives of several local organizations attended the meeting

Madison County

The Madison County Medical Society has issued the following statement in connection with its projected formation of an emergency service to be established for use in case of war, major disaster resulting from sabotage, or a major disaster such as a railroad wreck.

"The increasing seriousness of the situation abroad makes involvement of the United States in the war an increasing possibility. In conjunction with the plans for national defense that are being instituted by the United States Government, the Medical Society of the State of New York and its constituent county groups are now preparing plans to cover any possible emergency that may arise under such conditions. Protection of the general public with adequate and competent medical service and of the individual physician at all times is the primary purpose of this program

"It is intended that medical care shall be ample in the home, hospitals, and other institutions in all parts of the county, state, and country in event of such an emergency. Medical economic plans have been instituted, whereby families whose breadwinners are in the service and on a limited income will be provided for with medical means, during their absence, according to their income. Attention is given to the protection of physicians who may enter the service and may lose their practice in their absence

"Many civil hospitals might be taken over by the government for military purposes, and plans have been prepared whereby temporary hospitalization will be provided for civilians under such conditions. If hospitals should become deprived of active staffs in this emergency, arrangements will be made whereby such service will be covered by other physicians at that time. If any community is deprived of its physician, arrangements will be made whereby medical service will be rendered to that community by neighboring physicians

"Provisions have been made for the establishment of 'catastrophe units' which will be prepared to meet and care for any major catastrophe that might arise in the county as the result of sabotage of industries, major railroad accidents, etc.

"The society feels that these plans are highly important, and that they should be made now so that they can be put in effect if and when the emergency arises. The society believes that it might be disastrous to wait until the emergency arises and then endeavor to draw plans at that

time. Chaos, confusion, and inefficiency would be the result of such delay."

Monroe County

Latest advances in medical science were renewed for the benefit of Western New York and Northern Pennsylvania physicians at the fourth postgraduate medical conference of the University of Rochester Medical School at Strong Memorial Hospital, on September 10 to 12.

Principal subjects of study were nutritional disorders and vitamins, diseases of the gastrointestinal tract, and complications of pregnancy. Dr. Chester Jones, clinical professor of medicine, Harvard University Medical School, discussed gallbladder diseases. Dr. H. J. Stander, professor of obstetrics, Cornell Medical School, discussed prenatal diseases. Dr. Tom D. Spies, associate professor of medicine, University of Cincinnati Medical School, who spoke on September 12 is considered an outstanding authority on vitamin B.

Twenty per cent of the trainees in the federally sponsored defense industry trade classes in Rochester were found unfit for military or industrial defense service, a special committee of physicians reported on September 9.

Disclosing conditions similar to those existing among draftees of World War days, the medical defense committee of the county medical society urged immediate corrective action to salvage the majority through corrective treatments.

Of 620 men between the ages of 18 and 25 examined at the expense of the federal government for the Board of Education, a total of 135 were found to have a combination of defects. Only 16 men, however, were deemed beyond corrective treatment according to the report released by Dr. Clarence P. Thomas, committee chairman.

All defense trainees except those assigned by the W.P.A. were subjected to the comprehensive examination which involved x-ray and laboratory tests. Physicians working under a subcommittee headed by Dr. William A. Sawyer and including Dr. Arthur M. Johnson, city health officer and Dr. Benjamin Duffy, listed twenty different types of physical defects.

Tuberculin skin tests reacted positively in cases of 162 men and 30 of these subsequently were found to have chest abnormalities and were taken under observation for further evidences of tuberculosis.

Laboratory tests also revealed that 7 men had a venereal disease and these immediately were placed under treatment by public health authorities. The report continued:

Of the 620 men examined 171 were discovered to be underweight and 157 overweight. Physicians said: One hundred and six had flat feet. Fifty-seven had high blood pressure, and there were 30 with heart murmurs. Thirty-seven men were found with diseased tonsils and 11 with hernias. Twenty-two suffered from conditions indicating the possibility of diabetes or kidney trouble and 32 had possible anemia.

Eye tests showed 82 men with defective vision. 37 never have been vaccinated for smallpox, and 4 men suffered from marked varicose veins.

Nassau County

All the active health and hygiene organizations of Nassau County, including the county

medical society combined for a joint "Health Corner" in Education Hall at the Mineola Fair for this year's exhibition beginning September 24. There was a quiz desk where patrons might ask any question concerning health and receive an authoritative reply, a motion picture demonstration of disease prevention, a trained nurse on constant duty for consultation, and numerous other helpful features.

New York County

Dr. Phoebus Aaron Levene, member emeritus of the Rockefeller Institute for Medical Research and an internationally recognized authority on biochemistry, died on September 6 at his home, 129 East Eighty-second Street, Manhattan, following a heart attack. He was 71 years old. The scientist, who held both the Willard Gibbs and William H. Nichols medals of the American Chemical Society, two of the highest existing honors in his field, was noted for his studies of chemical configurational relationships and the nucleic acids. His work was recognized by membership in many scientific and medical bodies in the United States and abroad.

Onondaga County

Mobilization of all doctors of Syracuse and Onondaga County for possible wartime service in accordance with a national mobilization plan of the Surgeon General of the United States Army is under way with appointment of a Medical Preparedness Committee by Dr. Brewster C. Doust, president of the Onondaga County Medical Society.

Members of the committee are Dr. E. S. Van Duyn, chairman, Dr. M. A. Cain, Dr. H. B. Doust, Dr. A. T. Lawless, Dr. P. K. Menzies, Dr. C. G. Murdock, Dr. C. F. Potter, Dr. F. C. Rulison, and Dr. B. C. Doust *ex officio*.

Orange County

The Orange County Medical Society and Orange County Bar Association held a clambake in Spengler's Grove on Cohecton Turnpike on September 21 with a softball game advertised as for the county championship. Dr. E. H. Douglas Jr. was sports chairman.

Putnam County

At the regular monthly meeting of the Putnam County Medical Society on September 4 at the Gipsy Trail Club, Carmel, Dr. William J. Cowan of the Butterfield Hospital, Cold Spring, spoke upon "A Year of Tropical Medicine in the South Seas."—Reported by John T. Jenkin, M.D., Secretary.

Queens County

Active tuberculosis infections in more than 570 unsuspecting people have been detected through an x-ray demonstration at the World's Fair which was installed primarily as a display piece for the Medical building.

Infections were revealed through this public x-ray demonstration in 3.3 per cent of the 16,000 visitors tested, an alarming number in view of the national tuberculosis rate of one-half of 1 per cent.

The high rate discovered among fairgoers indicates that tuberculosis is about three times as widespread as health figures show. According to Dr. James R. Reuling, chairman of the Queens

Medical Society's Fair Commission, which sponsors the exhibit, the findings "offer statistical proof of the deplorable fact that there are a great many more people in need of immediate medical attention and, what is much worse, people who are ignorant of the fact that they are sick."

Dr Reuling also pointed out that the World's Fair x-rays disclosed various chest abnormalities and deficiencies in 15 per cent of the persons examined, including one unusual case where the radiograph showed one visitor for the first time that there was a carpet tack lodged neatly in his torso.

Rockland County

The annual clambake of the Rockland County Medical Society was held at Summit Park on September 4. The *Nyack Journal News* reported "The event is one of the features of the society's yearly program and it gets better as the years go by. The doctors forgot their appendectomies, embolisms, and office hours for the whole afternoon and wrapped themselves up in clams, shrimp, corn, chicken, and watermelon with a portion of beer for wetting and from the hundred or so at the bake there wasn't a murmur of complaint. It was, again as usual, Dr William J. Ryan's party, and he was the committee of one to welcome the arrivals and see that everything ran smoothly."

St. Lawrence County

A social meeting of the St. Lawrence County Medical Society was held at the Potsdam Country Club, September 5. Luncheon was served. The hosts, the physicians and staff of the Potsdam Hospital, provided golf, cards, and other entertainment during the afternoon for the members, their wives, and guests.

Steuben County

The Steuben County Bar Association and the Steuben County Medical Society held a joint meeting on September 12 at the Hotel Sherwood in Hornell. Dr Floyd Winslow, of Rochester, spoke on "Experiences of a Coroner's Physician," illustrating his talk with lantern slides. The medical society then held a business meeting.

Tioga County

Dr Guy S. Carpenter, of Waverly, a former vice-president of the State Medical Society, a member of the Council and the Public Relations Committee, a delegate to the A.M.A., and past president of the Tioga County Medical Society, died of a cerebral hemorrhage on August 28 at the Tioga County General Hospital. He was 66 and had practiced medicine forty-one years.

Washington County

The Medical Society of the County of Washington met at Hudson Falls on August 28.

President Irvine appointed a Committee on Medical Preparedness to cooperate with the committee of the State Society. On this committee are Dr V. K. Irvine, Granville, Dr W. C. Cuthbert, Hudson Falls, Dr Edward V. Farrell, Whitehall, and Dr D. M. Vickers, Cambridge. It was voted that the committee tabulate the information on the forms now in the process of being returned, consider any action that might be advisable in Washington County, and report to the society at its annual meeting in October.

The committee then discussed the new proposed organization of the Department of Welfare with the Commissioner, who was present. The new plan includes a medical director who will be a part-time member of the department to aid in coordinating the medical work.—*Reported by D. M. Vickers, M.D., Secretary*

Deaths of New York State Physicians

Name	Age	Medical School	Date of Death	Residence
Floyd J. Atwell	56	Albany	August 24	Cooperstown
Walter C. Byrne	70	Georgetown	August 15	Elmira
Guy S. Carpenter	66	Cornell	August 28	Waverly
Joseph W. Droogan	71	Albany	August 27	Bronx
Kenneth P. Foster	32	Buffalo	August 19	Gloversville
Norton H. Good	62	Buffalo	August 24	Buffalo
Forbes Hawkes	75	P & S N Y	August 24	Manhattan
Ira L. Hill	64	Detroit	September 2	Manhattan
James Krom	71	P & S N Y	September 9	Saugerties
Phoebus A. T. Levene	71	St. Petersburg	September 6	Manhattan
Isidor T. Lilienstein	58	Wurzburg	June 21	Manhattan
Mathilde Loth	44	Yale	August 29	Manhattan
John D. McBarron	73	P & S N Y	August 25	Manhattan
Henry G. Morris	45	Cornell	August 20	Jamestown
William G. Phillips, Jr.	51	L. I. C. Hosp.	August 24	Manhattan
Sarah G. Pierson	63	Syracuse	August 26	Rochester
Harry M. Rammol	47	Fordham	August 11	Manhattan
Thomas Scholz	59	P & S N Y	August 28	Manhattan
Joseph E. Smith	87	Jefferson	August 22	Brooklyn
William J. Tindall	71	Univ. Vermont	August 22	Manhattan
Ralph C. Williams	64	Toronto	September 3	Brooklyn

Public Health News

4-H Club Examinations

FROM time to time physicians in different localities in the state will be asked by members of 4-H Clubs to make physical examinations. These examinations, made thoroughly and in considerable detail, serve many excellent purposes.

First, they lead to the detection of conditions that need treatment.

Second, they form an integral part of the health program carried on by the Council Committee on Public Health and Education. Every member of these youth organizations is being urged to have a physical examination by his family physician each year and a dental examination by his dentist.

Third, the New York State Department of Health is cooperating actively in this program in order to facilitate the dissemination of Public Health knowledge. In smaller communities especially, the family physician is frequently the local health officer.

The Committee on Public Health and Education is working with the 4-H Club organization to evolve a plan that can be carried to other youth organizations. While recognizing, for what value it has, the "Most Perfect Boy and Girl Contest," whereby a girl and a boy from each state is selected for a national health review in Chicago, the committee gradually is changing the emphasis to health improvement of the individual 4-H Club member in New York State. A radical change this year in selecting county representatives for the state contest is the elimination of the "scoring" system. Only candidates without defects of any kind will be considered for the state examination.

Your cooperation and participation in this health program will be greatly appreciated by the committee.

Council Committee on Public Health and Education
OLIVER W. H. MITCHELL, M.D., *chairman*,
GEORGE BAEHR, M.D., and CHARLES DAYTON
POST, M.D.

Subcommittee on 4-H Clubs
J. G. FRED HISS, M.D., *chairman*

THE AMERICAN "SUICIDE BELT"

Where is the American "suicide belt"? What part of the country leads in the last counsel of despair? Many may be surprised to learn that it is our vaunted Pacific Coast, land of flowers and sunshine. The figures have just been issued by the Census Bureau for suicides in the years 1920-1933, inclusive. True the procession is led by Nevada, with a rate of 35.6 per 100,000 population, but Reno is in Nevada and that may explain something. Next door to Nevada is California, and California also stands next in suicide, with 30.5 per 100,000 followed by Washington with 26.8 and Oregon with 21.5. Neighbors of the Coast states are the Rocky Mountain states, and they trail along with 21.6 for Arizona, 19.7

for Idaho, 19.6 for Wyoming, 19.2 for Colorado and 19.1 for Montana. So the region from the noble Rockies to the glittering Pacific is our suicide belt. Explanations will be interesting.

Our sunny Southland, in contrast comes up with the lowest *felo de se* figures. South Carolina is smallest with 6.7 per 100,000, followed in order by Mississippi, Alabama, Louisiana, Arkansas, North Carolina and Georgia ranging up to 9.9. The rate of New York State is 17.3, although New York, with its large population, had the largest gross number of suicides—2,248. Nevada with the highest rate, had the smallest gross—only 36.

The Woman's Auxiliary

To the Medical Society of the State of New York

OUR national president, Mrs V B Holcombe, of Charleston, West Virginia, has taken for the theme of this year's administration, "Look Forward" To quote, "We are living through one of the crucial periods of the world's history. The years of serious endeavors, the straightforward facing of ever changing conditions and attitudes, the understanding and appreciation of keeping physically, mentally, and morally fit, and the difficulties in the professional field, and now the war have brought to the members of the Woman's Auxiliary a conviction that the work of the organization, if it is to go forward,

must be done in a spirit of 'Service to Humanity' All selfish ambitions must be set aside, idealism become realism, and each phase of the Auxiliary's activities more closely correlated"

We as an auxiliary are urged to stress the following departments Hygeia, Programs of Health and Medical Importance, Public Relations, Legislation, Membership, and Exhibits

Again to quote, "With clear vision and a determination born of high ideals may each member of the Auxiliary enter this year's work and accept the challenge to dispatch the assignments, to discriminate, to evaluate, and to look forward!"

County News

Albany The wives of the members of the Third District Branch to the New York State Medical Society, which includes Schoharie, Albany, Rensselaer, Greene, Columbia, Sullivan, and Ulster, were entertained by the Albany County Auxiliary at the De Witt Clinton Hotel, on September 17. Columbia County and Albany County held their regular monthly meetings at this time and doctors' wives of the unorganized counties were invited. A luncheon and card party were held, followed by a tea. Presiding at the tea table were the presidents of the auxiliaries Mrs Alfred Madden, Mrs Ralph Breakey, and Mrs William D Collins.

In the receiving line were Mrs Arthur M Dickinson, wife of the president of the Third District Branch, Mrs P L Forster, Mrs Leon Shank, Mrs Kenneth Bott, Mrs Charles Hamm, Mrs Daniel Beasal, Mrs Harry Galembe, and Mrs William S Bush.

On October 23, the Albany Auxiliary will be addressed by Dr Louis Bauer, a member of the Medical Preparedness Committee of New York Medical Society. His topic will be Medical Preparedness. An invitation will be extended to members of surrounding auxiliaries.

Cayuga. Worthy to note was the fine gesture of Cayuga County. The annual dinner of the auxiliary was not held, and the sum allotted for the dinner was presented to the American Red Cross.

Mrs G B Adams, president-elect of the New York State Auxiliary, was guest of honor at a tea held at the home of Mrs J L Wiley, Owasco. Members of the Onondaga County Auxiliary were present and extended their greetings.

Erie County The spot chosen by the Eighth District Branch of the New York State Medical Society for perusal of their problems is Niagara Falls, the date, October 3, the place, The Niagara Hotel. Dr Leon J Leahy, president of this district, is anxious to have the ladies attend. A committee headed by Mrs William Rennie is in charge of this event, and a "get-together" before the luncheon has been planned. Mrs Luther H Kice, president of the New York State Auxiliary will be the guest speaker. Bridge or sight-seeing will follow.

Every doctor's wife in Erie County is invited and urged to come. The committee is anxious for the day to be a success. They regret that it is impossible to invite everyone individually and only hope that all who read this will jump into their cars and take to the Niagara Falls Highway.

Essex To Essex County the members of the State Auxiliary extend a hearty welcome. From Mrs H J Harris, of Westport, comes the following report of the organization of Essex County on June 4 at the semiannual meeting of the Medical Society. There were ten wives present at the Deer's Head Inn at Elizabethtown. Mrs G Scott Towne, the past president of the State Auxiliary, Mrs T C Bullard, of Saratoga, and Mrs R F Johnson, of Cayuga, gave short talks.

The officers elected were president, Mrs J A Gaus, Ticonderoga, vice president, Mrs A Gerson, Elizabethtown, secretary, Mrs H J Harris, Westport, treasurer, Mrs J G Gees, Lake Placid. A special meeting was held July 15 for the purpose of arranging further plans. The membership now is 14. Their meetings will be held semiannually, concurrent with the Medical Society because of the distance separating each meeting place. With the formation of Essex County as an auxiliary there are twenty-four counties organized in New York State. We are proud to include this county to represent the Adirondack region.

Nassau. The first meeting of the year, to which all doctors' wives received invitations, was a membership tea held in the Auditorium of the Nassau Hospital on September 24. Guests were greeted by the president of the auxiliary, Mrs A C Martin, and by Dr Aaron Higgins, president of the county medical society.

The officers elected were president Mrs. A C Martin, president-elect, Mrs B St. John, first vice-president, Mrs L A Van Kleeck, second vice-president, Mrs H Hirsch, recording secretary, Mrs T Newsome, corresponding secretary, Mrs C Welge, treasurer, Mrs D Bonham, directors, Mrs L H Kice, Mrs L Lally, Mrs A M Bell, Mrs N H Robin, Mrs W Fry, and Mrs P A Robin.

Oswego On July 25 a joint dinner meeting was held by members of the Oswego Medical

Society and its auxiliary at the Pleasant Point Club. A brief business session was held by the auxiliary, Mrs. John L. Mason presiding. Fall activities for the year were discussed.

Queens. The active Queens County Auxiliary has completed arrangements for its Armistice Dinner-Dance to be held November 9 at the Aviation Terrace of LaGuardia Field. Mrs. Meyerson Coe, chairman, will be assisted by Mrs. J. Finnegan, who is in charge of special prizes, Mrs. A. Kiffany, tickets, and Mrs. W. Brons, table arrangements. Others assisting are Mrs. E. Coe, Mrs. M. Pollock, Mrs. H. Foster, Mrs. C. Davidson, Mrs. William Lynch, Mrs. W. Steffin, Mrs. A. Giambalvo, Mrs. S. Catalanello, Mrs. R. Beck, Mrs. G. Jantzen, Mrs. J. Keating, Mrs. J. Drago, Mrs. R. Yanover, and Mrs. J. G. Hill.

A needlepoint piece made by Mrs. William M. Stone, of Flushing, will be awarded. The auxiliary expects this affair to be a great success, and the committee feels it will be the largest affair they have ever had.

Schenectady. The Fourth District Branch of the Medical Society holds its annual meeting in Schenectady on October 1 and 2. At this time the Woman's Auxiliary will entertain all the doctors' wives in this district. The presidents of the county auxiliaries will act as hostesses for the day. Guests of honor will be the wives of the presidents of the county medical societies not having auxiliaries and the wives of the district branch officers. A varied program of entertainment has been arranged. A display at the House of Magic of the General Electric Company and a tour of the WGY Studio will be some of the interesting features afforded. There will be a luncheon given by the Schenectady auxiliary, at which time it is hoped Mrs. L. H. Kice, the state president, and Mrs. R. F. Johnson, organization chairman, will enlighten unorganized counties on the values of an auxiliary. Representatives from St. Lawrence, Franklin, Clinton, Hamilton, Essex, Warren, Fulton, Saratoga, Washington, and Montgomery counties are expected to be present.

WHAT THE CENSUS TELLS THE DOCTOR

Preliminary analyses of information collected during the recent 1940 Federal census reveals a population trend away from metropolitan centers toward small suburbs and cities not too far distant from the larger industrial and trading centers.

This fact should give the physician preparing to begin the private practice of medicine something to think about, believes the *Ohio State Medical Journal*. Instead of opening offices in some large city, he should consider the possibilities of starting a practice in outlying communities.

These factors, cited by census officials, are responsible for failure of the large cities to keep pace with smaller communities in the population

increase—lure of the home in the country with a little plot of ground, cheaper and more desirable housing in outlying areas, improved thoroughfares and traffic facilities, extension of utility systems (power, water, and gas), decrease in metropolitan birth rates, movement of factories, elimination of slums. Obviously, these factors should be taken into consideration by the young physician when he starts out to find a suitable location.

It is impossible to divorce social and economic trends and the practice of medicine. The physician starting practice should not disregard social and economic factors. The physician already practicing will not disregard them if he fully appreciates their significance.

Prize Essays

THE Lucien Howe Prize will be open for competition at the next Annual Meeting of the Medical Society of the State of New York, May 19, 1941, in Buffalo. This prize of \$100 will be presented for the best original contribution on some branch of surgery, preferably ophthalmology. The author need not be a member of the Medical Society of the State of New York. The following conditions must be observed:

Essays shall be typewritten or printed and the only means of identification of the author shall be a motto or other device. The essay shall be accompanied by a sealed envelope having on the outside the same motto or device and containing the name and address of the writer.

If the Committee considers that no essay or contribution is worthy of the prize, it will not be awarded.

Any essay that may win the prize automatically becomes the property of the Medical Society of the State of New York "to be published as it may direct."

All essays must be presented no later than February 1, 1941, and sent to the Chairman of the Committee on Prize Essays of the Medical Society of the State of New York, 202 Madison Avenue, New York.

CHAS. GORDON HEYD, M.D., Chairman, Committee on Prize Essays

Books

Books for review should be sent to the Book Review Department at 1313 Bedford Avenue, Brooklyn, N Y. Acknowledgment of receipt will be made in these columns and deemed sufficient notification. Selection for review will be based on merit and the interest to our readers.

REVIEWED

Fractures By Paul B. Magnuson, M D. Third edition. Octavo of 511 pages, illustrated. Philadelphia, J B Lippincott Co., 1939. Cloth, \$5 00.

This is the third edition revised and enlarged, by a recognized authority. It was conceived and written to meet the needs of the man who first sees the fracture. This purpose is well met. The material is based on the author's own experiences. The result is an original, smoothly written text.

There is much to praise in this volume. The chapter on fractures of the forearm is excellent, the sections on fractures of the spine and of the skull are remarkably well done. The uses to which the writer puts the Thomas splint with the Pearson attachment are ingenious.

Fractures of the os calcis might have merited fuller and lengthier discussion than that accorded them. No mention is made of Boehler's methods of treating these disabling fractures. This we believe to be a serious omission. Exception might be taken to the statement that "nonunion is the rule in fractures of the body of the carpal scaphoid."

The greatest point of controversy, in the opinion of this reviewer, is the role assigned to physical therapy in the treatment of fractures. The author advises its employment within the first week in all fractures of the extremities except those of the femur, fibular shaft, os calcis, tarsus, and metatarsus. He recommends its use in Colles' fracture from the second day on. There is a large body of opinion opposed to the use of physical therapy in the treatment of fresh fractures.

MAYER E. ROSS

Pneumoconiosis (Silicosis) The Story of Dusty Lungs A Preliminary Report by Lewis G. Cole, M D., and William G. Cole, M D. Quarto. Illustrated. New York, The Authors, 1940. Cloth, \$1 00.

In this small but well-printed volume, the Coles advance the hypothesis that nodular pneumoconiosis is not a manifestation of the deposit of silica in lung tissue and that it should not, in the absence of complications, be considered compensable. Their thesis is based on their finding, after careful study of pathologic material, that there are few, if any, silica crystals in the "silicotic" nodule. On the other hand they describe two new classifications that they consider to be definitely compensable. In a separate section the use of the "electric eye" is described. The style is highly personalized. The conclusions, while not as yet acceptable to most workers in this field, are challenging enough to make the book important reading.

MILTON PLOTZ

Primer of Allergy A Guidebook for Those Who Must Find Their Way Through the Mazes

of this Strange and Tantalizing State. By Warren T. Vaughan, M D. Duodecimo of 140 pages, illustrated. St. Louis, C V Mosby Co. 1939. Cloth, \$1 50.

This book is written primarily for popular consumption. Its purpose is to give the patient sufficient insight into, and understanding of, this constitutional disturbance to enable him to cooperate intelligently with the doctor in arriving at a diagnosis and so assist in the treatment. The author assures the reader that there is no short cut to cure by self-medication.

Each of the ten chapters ends with a set of questions and answers, which act as a review of preceding material. All technical terms are defined in simple English.

By simile and allegory the author, an authority on allergy, certainly makes of this perplexing subject an interesting bedtime story for the layman. We heartily endorse his "primer" and do not hesitate recommending it to our allergic patients and professional friends.

THOS B. WOOD

Office Gynecology By J. P. Greenhill, M D. Octavo of 406 pages, illustrated. Chicago, The Year Book Publishers, Inc., 1939. Cloth, \$3 00.

The author has efficiently filled the need for a book devoted exclusively to medical gynecology and the technic of minor operative procedures that can be performed in a physician's office. It is intended particularly for those who feel the need for graduate instruction but cannot leave their practice for this purpose.

The book is complete in that not only are the medical aspects of gynecology covered but also practically every operative and nonoperative procedure in gynecology that may be carried out in a medical office. In addition, some diagnostic tests and treatments such as hysterosalpingography and pneumoperitoneum are described and illustrated.

The book should unquestionably be of value to those who practice office gynecology but have not had the advantage of long training or experience in this field. It is heartily recommended to the profession.

A. H. ROSENTHAL

Diseases of the Ear, Nose, and Throat. Principles and Practice of Otorhinolaryngology By Francis L. Lederer, M D. Second edition. Quarto of 840 pages, illustrated. Philadelphia, F A Davis Co., 1939. Cloth, \$10.

Actual revision of the text of the new edition is minimal. The addition of about 250 supplementary illustrations (50 per cent more than the first edition) serves to illuminate the text in greater detail. The arrangement, novel in the original edition, is preserved. Color plates and tables are retained. The schematic three-dimensional drawings in color make orientation easier for the student and general practitioner.

This work is attractively printed and bound and its content logically arranged. The approval generally expressed on publication of the original text seems fully justified by the appearance of the second edition in less than a year. Author and publisher are to be congratulated on the new edition of the first streamlined textbook in otolaryngology.

HARRY MEYERSBURG
Hospital Public Relations By Alden B Mills. Octavo of 361 pages illustrated. Chicago, Physicians' Record Co., 1939. Cloth, \$3.75.

This book will be welcomed by governing bodies of hospitals and by executives who are becoming increasingly aware of not only the need but the desirability of a sound and effective public relations program. Mr. Mills defines such a program as a "conscious, sincere, directed endeavor to create and strengthen contacts which contribute to the development of mutual understanding, good will, and respect between an institution (or business) and its public." That must be informed and educated but, above all, definition are to be obtained. The principles involved and the underlying theories are analyzed and developed into a definite program in the first section of the book. The chapters covering "Influencing of Public Opinion" and "Principles of Public Relations" are comprehensive and explicit.

The problems incident to this period of intense competition for the philanthropic dollar, of enormous increase in the expense occasioned by scientific progress affecting standards of adequate medical service, of changing philosophies as to what auspices shall provide such medical care having been dealt with in general, the second part of the book undertakes to illustrate with practical examples the application of the principles propounded by means of all the range of personal contacts and expositional techniques. The annual report and other publications and relations with the press, radio, films, and entertainments are helpfully discussed and drawn from a wide range of experience.

W G NEALLEY
The Hospital Care of Neurosurgical Patients By Wallace B Hamby, M D. Octavo of 118 pages, illustrated. Springfield, Charles C Thomas, 1940. Cloth \$2.00.
 This is an excellent little book designed for the instruction of nurses, interns, and residents in charge of neurosurgical cases. Naturally each clinic has tricks of its own in reference to most of the subjects discussed, but the book presents a sort of a baseline around which modifications can be built. It is a book well worth having in any hospital library.

LEO M DAVIDOFF
Combined Textbook of Obstetrics and Gynecology For Students and Medical Practitioners. Revised and rewritten by J M Munro Kerr, M D. Third edition. Quarto of 1,192 pages, illustrated. Baltimore, Williams & Wilkins Co., 1939. Cloth, \$12.
 This big, strong well bound book of nearly 1,200 pages contains about all a textbook can.

Except for this book, obstetrics and gynecology in the same volume has not found favor. Certainly considerable repetition is avoided in this way. It is really a reference book for the student and practitioner, as operations are not described in any great detail.

Induction of premature labor in contracted pelvis, symphysiotomy, transverse incision in the lower segment cesarean are advised. None of the new obstetric forceps is mentioned. The book is, of course, not intended for specialists so it contains but little more than essential information. It is recommended for that purpose.

CHARLES A GORDON
Medical State Board Questions and Answers By R Max Goepf, M D. Seventh edition. Octavo of 644 pages. Philadelphia, W B Saunders Company, 1938. Cloth, \$5.50.

Medical State Board Examinations. Topical Summaries and Answers An Organized Review of Actual Questions Given in Medical Licensing Examinations Throughout the United States. By Harold Rypins, M D. Fourth edition. Octavo of 448 pages. Philadelphia, J B Lippincott Co., 1939. Cloth, \$4.50.
 The third edition of Rypins and the seventh of Goepf retain all of the good features of past editions and add some new material, bringing the books as up to date as possible. Which the prospective candidate will choose to help him in rapid review for board examinations will be a matter of individual preference. Those who prefer straight outline will choose Rypins, those who prefer the question and answer method will like Goepf.

MILTON PLOTZ
Illustrations of Regional Anatomy By E B Jamieson, M D. Second edition in seven sections. Octavo. Baltimore, William Wood & Co., 1937 and 1939. Paper, \$15. complete set.
 These loose-leaf cardboard-covered volumes contain plates mostly all in color, and, although some are schematic drawings, the majority are from actual dissections by the author. The first edition made its appearance in October, 1934 as five separate volumes or sections. Since then the author has added the upper and lower limbs as sections six and seven, respectively, thus making the body complete.
 Each volume contains from thirty to sixty-three plates and the names used in the legends are those approved by the Anatomical Society of Birmingham in 1933. Where they differ radically from the Basle Nomina Anatomica the B N A forms are inserted in brackets.
 The volumes are primarily for teaching, and the paper on which they are drawn makes it possible for the student to draw in color on the opposite side of the plate.
 The loose-leaf arrangement of the book makes the plates easily removable for purposes of illustrating the anatomy of various sections of the body, which is a decided advantage to those who are reading papers or giving lectures where a specific section of the anatomy of the body needs to be illustrated.

It has another decided advantage in that it can serve as a ready anatomic reference to practitioners of medicine and surgery.

H T WIELE

Clinical Toxicology By Clinton H. Thienes, M.D. Octavo of 309 pages, illustrated Philadelphia, Lea & Febiger, 1940 Cloth, \$3 50

This small book deals with poisons in a simple and concise manner. It is not redundant with material irrelevant to the needs of the clinician. A book on toxicology, however, should list the more common industries and occupations in which poisoning is apt to occur. This would be of great help to the physician in at least suggesting to him what poison may be the offending substance in a given case.

Every physician prescribing drugs should have this book available for ready use. Only by frequent reference to such books will prescribing physicians become aware of the constant dangers lurking in the administration of our most useful drugs.

CHARLES SOLOMON

Forensic Medicine By Sydney Smith, M.D. Sixth edition. Octavo of 654 pages, illustrated Boston, Little, Brown and Co., 1939 Cloth, \$7 50

The sixth edition of *Forensic Medicine* is a thorough revision of its previous texts, with many new illustrations added and certain of the others eliminated.

Few scientific works of this nature are maintained for longer than the lifetime of their authors, gradually succumbing for want of up-to-date progress in their respective fields. The reviewer feels that this is one of the few works that will remain a permanent reference to both physicians and lawyers alike.

Perusal of Professor Smith's book shows an expert knowledge and original study of many of the subjects contained in it. His views and conclusions are most worthy of respect and form a valuable contribution to the literature of forensic medicine and toxicology.

S INGRAM HYRKKIN

The New International Clinics. Original Contributions, Clinics, and Evaluated Reviews of Current Advances in the Medical Arts. Edited by George M. Piersol, M.D. Volume III, New Series Two. Octavo of 332 pages, illustrated Philadelphia, J. B. Lippincott Co., 1939 Cloth, \$3 00

Many topics of interest are presented. In an article on "Recent Developments in the Epidemiology of Poliomyelitis," Paul and Trask present an argument for considering the disease an intestinal disorder spread by the channels operative in summer diseases. There is reported the results of experience with sulfapyridine in pneumonia in fifty-four patients by Hartmann and others. In acute neutropenia, Retznikoff calls attention to the reports on the use of yellow bone marrow in addition to other measures. In another article the use of placental blood for transfusion is favorably considered.

Among the clinics presented is one on vascular diseases and one on pneumococcal meningitis with recovery treated with sulfapyridine by mouth, with oxygen therapy, repeated lumbar punctures, and blood transfusion. After 13 Gm of sulfapyridine had been given, it was not possible to obtain a positive spinal fluid culture, and the drug concentration in spinal fluid was 9.6 mg per hundred cubic centimeters.

A review of obstetric hemorrhage by Eastman, of Johns Hopkins, furnishes a full discussion of that subject.

W E McCOLLON

Pneumonia with Special Reference to Pneumococcus Lobar Pneumonia. By Roderick Heffron, M.D. Octavo of 1,086 pages. New York, Commonwealth Fund, 1939 Cloth, \$4 50

Some idea of the scope of this volume may be obtained from a consideration of the fact that the chapter on "Aspects of Immunity" is nearly one hundred pages long, and the section on diagnosis and differential diagnosis is over 40 pages in length. The thoroughness with which every aspect of the study of lobar pneumonia is treated is attested to by the bibliography which contains 1,471 items. Dr. Heffron, who is connected with the Commonwealth Fund, has brought to the writing of this comprehensive book a wealth of experience in the management and epidemiology of pneumonia.

There is very little that is original here, but all of the literature is well digested, critically examined, and entertainingly presented. It seems unlikely to this reviewer that a student will fail to find in Heffron's book useful information on even the most obscure phases of pneumonia. There are no illustrations, but this, probably, has been one factor in keeping the price of the book down to an extremely reasonable figure, thus making it available to almost every one. The title is somewhat misleading because very little space is devoted to any pneumonias aside from the pneumococcal lobar pneumonias.

MILTON PLOTZ

Nutrition and Physical Degeneration. A Comparison of Primitive and Modern Diets and Their Effects. By Weston A. Price, D.D.S. Octavo of 431 pages, illustrated New York, Paul B. Hoeber, Inc., 1939 Cloth, \$5 00

This book shows the efforts of painstaking study and research. The author has gathered material from the four corners of the world. The discussion on all primitive diets and their relationship to health paralleled with the discussion on civilized dietary and its relation to health, leads to the author's opinion that refined foods are the cause of tissue degeneration and poor health. Being a dentist, he is especially interested in the control of dental caries and jaw deformities.

The book is well bound and well printed and may also be classed as a travelogue on nutrition.

MORRIS ANT

Attaining Womanhood. A Doctor Talks to Girls About Sex. By George W. Corner, M.D. Duodecimo of 95 pages, illustrated New York, Harper & Bros., 1939 Cloth, \$1 00

A sex education book for the laity, this little volume is intended for the growing girl herself. Written by the distinguished professor of anatomy at the University of Rochester, it should find favor. The illustrations are rough but clear, simple, and accurate. The text is gentle, sympathetic, and anything but sensational. Chapters on sex attraction, conduct, and problems are very well done, indeed, and should do a vast amount of good. Recommended.

CHARLES A. GORDON

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Editorial

Mr. Roosevelt Replies

The *Rocky Mountain Medical Journal* for October, 1940, makes good its offer of September (in which issue it printed Mr. Willkie's terse statement of his views on socialized medicine, reproduced in this JOURNAL for September 15, 1940, p. 1347) by carrying on its first editorial page a letter dated The White House, September 6, 1940, and signed Stephen Early, Secretary to the President.

In the letter Mr. Early says "The President's views on the subject about which you inquire were expressed in a speech delivered at the Jersey City Medical Center on October 2, 1936, and, for your information, I have much pleasure in enclosing a copy of that speech. The views expressed by the President on that occasion have in no wise been changed or modified since the delivery of the speech in question and still constitute a complete statement of his principles."

ENCLOSURE

"It is a privilege to take part in the dedication of this Medical Center—the third largest medical institutional group in the United States.

"I am happy, too, that the Federal Government through its Public Works expenditures has been able to be of assistance to the municipal government of Jersey City and to Hudson County in making this Center possible. As a matter of fact, the expenditures through the Public Works Administration are increasing the capacity of American hospitals by nearly 50,000 beds. During the depression the difficulty of obtaining funds through municipal or private sources would have meant a serious shortage in caring for patients and in giving them ade-

quate facilities had it not been for Federal assistance through loans and grants.

"But there is another reason for increasing the bed capacity of the hospitals of the country. The Medical and Nursing professions are right in telling us that we must do more to help the small income families in times of sickness.

"Let me with great sincerity give the praise which is due to the doctors of the Nation for all that they have done during the depression, often at great sacrifice, in maintaining the standards of care for the sick and in devoting themselves without reservation to the high ideals of their profession.

"The Medical profession can rest assured that the Federal Administration

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Every physician prescribing drugs should have this book available for ready use. Only by frequent reference to such books will prescribing physicians become aware of the constant dangers lurking in the administration of our most useful drugs.

CHARLES SOLOMON

Forensic Medicine By Sydney Smith, M D Sixth edition Octavo of 654 pages, illustrated Boston, Little, Brown and Co, 1939 Cloth, \$7 50

The sixth edition of *Forensic Medicine* is a thorough revision of its previous texts, with many new illustrations added and certain of the others eliminated.

Few scientific works of this nature are maintained for longer than the lifetime of their authors, gradually succumbing for want of up-to-date progress in their respective fields. The reviewer feels that this is one of the few works that will remain a permanent reference to both physicians and lawyers alike.

Perusal of Professor Smith's book shows an expert knowledge and original study of many of the subjects contained in it. His views and conclusions are most worthy of respect and form a valuable contribution to the literature of forensic medicine and toxicology.

S INGRAM HYKIN

The New International Clinics. Original Contributions, Clinics, and Evaluated Reviews of Current Advances in the Medical Arts Edited by George M Piersol, M D Volume III, New Series Two Octavo of 332 pages, illustrated Philadelphia, J B Lippincott Co, 1939 Cloth, \$3 00

Many topics of interest are presented. In an article on "Recent Developments in the Epidemiology of Poliomyelitis," Paul and Trask present an argument for considering the disease an intestinal disorder spread by the channels operative in summer diseases. There is reported the results of experience with sulfapyridine in pneumonia in fifty-four patients by Hartmann and others. In acute neutropenia, Retznikoff calls attention to the reports on the use of yellow bone marrow in addition to other measures. In another article the use of placental blood for transfusion is favorably considered.

Among the clinics presented is one on vascular diseases and one on pneumococcal meningitis with recovery treated with sulfapyridine by mouth, with oxygen therapy, repeated lumbar punctures, and blood transfusion. After 13 Gm of sulfapyridine had been given, it was not possible to obtain a positive spinal fluid culture, and the drug concentration in spinal fluid was 9.6 mg per hundred cubic centimeters.

A review of obstetric hemorrhage by Eastman, of Johns Hopkins, furnishes a full discussion of that subject.

W E McCOLLON

Pneumonia with Special Reference to Pneumococcus Lobar Pneumonia. By Rodenck Heffron, M D Octavo of 1,086 pages New York, Commonwealth Fund, 1939 Cloth, \$4 50

Some idea of the scope of this volume may be obtained from a consideration of the fact that the chapter on "Aspects of Immunity" is nearly one hundred pages long, and the section on diagnosis and differential diagnosis is over 40 pages in length. The thoroughness with which every aspect of the study of lobar pneumonia is treated is attested to by the bibliography which contains 1,471 items. Dr Heffron, who is connected with the Commonwealth Fund, has brought to the writing of this comprehensive book a wealth of experience in the management and epidemiology of pneumonia.

There is very little that is original here, but all of the literature is well digested, critically examined, and entertainingly presented. It seems unlikely to this reviewer that a student will fail to find in Heffron's book useful information on even the most obscure phases of pneumonia. There are no illustrations, but this, probably, has been one factor in keeping the price of the book down to an extremely reasonable figure, thus making it available to almost every one. The title is somewhat misleading because very little space is devoted to any pneumonias aside from the pneumococcal lobar pneumonias.

MILTON PLOTZ

Nutrition and Physical Degeneration. A Comparison of Primitive and Modern Diets and Their Effects By Weston A Price, D.D.S. Octavo of 431 pages, illustrated New York, Paul B Hoeber, Inc, 1939 Cloth, \$5 00

This book shows the efforts of painstaking study and research. The author has gathered material from the four corners of the world. The discussion on all primitive diets and their relationship to health paralleled with the discussion on civilized dietary and its relation to health, leads to the author's opinion that refined foods are the cause of tissue degeneration and poor health. Being a dentist, he is especially interested in the control of dental caries and jaw deformities.

The book is well bound and well printed and may also be classed as a travelogue on nutrition.

MORRIS ANT

Attaining Womanhood. A Doctor Talks to Girls About Sex. By George W Corner, M D Duodecimo of 95 pages, illustrated New York, Harper & Bros, 1939 Cloth, \$1 00

A sex education book for the laity, this little volume is intended for the growing girl herself. Written by the distinguished professor of anatomy at the University of Rochester it should find favor. The illustrations are rough but clear, simple, and accurate. The text is gentle, sympathetic, and anything but sensational. Chapters on sex attraction, conduct, and problems are very well done, indeed, and should do a vast amount of good. Recommended.

CHARLES A GORDON

NEW YORK STATE JOURNAL of MEDICINE

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Editorial

Mr. Roosevelt Replies

The *Rocky Mountain Medical Journal* for October, 1940, makes good its offer of September (in which issue it printed Mr Willkie's terse statement of his views on socialized medicine, reproduced in this JOURNAL for September 15, 1940, p 1347) by carrying on its first editorial page a letter dated The White House, September 6, 1940, and signed Stephen Early, Secretary to the President

In the letter Mr Early says "The President's views on the subject about which you inquire were expressed in a speech delivered at the Jersey City Medical Center on October 2, 1936, and, for your information, I have much pleasure in enclosing a copy of that speech The views expressed by the President on that occasion have in no wise been changed or modified since the delivery of the speech in question and still constitute a complete statement of his principles "

ENCLOSURE

"It is a privilege to take part in the dedication of this Medical Center—the third largest medical institutional group in the United States

"I am happy, too, that the Federal Government through its Public Works expenditures has been able to be of assistance to the municipal government of Jersey City and to Hudson County in making this Center possible. As a matter of fact, the expenditures through the Public Works Administration are increasing the capacity of American hospitals by nearly 50,000 beds During the depression the difficulty of obtaining funds through municipal or private sources would have meant a serious shortage in caring for patients and in giving them ade-

quate facilities had it not been for Federal assistance through loans and grants

"But there is another reason for increasing the bed capacity of the hospitals of the country The Medical and Nursing professions are right in telling us that we must do more to help the small income families in times of sickness

"Let me with great sincerity give the praise which is due to the doctors of the Nation for all that they have done during the depression, often at great sacrifice, in maintaining the standards of care for the sick and in devoting themselves without reservation to the high ideals of their profession

'The Medical profession can rest assured that the Federal Administration

contemplates no action detrimental to their interests. The action taken in the field of health as shown by the provisions of the splendid Social Security Act recently enacted is clear.

"There are four provisions in the Social Security Act which deal with health, and these provisions received the support of outstanding doctors during the hearings before Congress. The American Medical Association, the American Public Health Association, and the State and Territorial Health Officers Conference came out in full support of the public health provisions. The American Child Health Association and the Child Welfare League endorsed the maternal and child health provisions.

"This in itself assures that the health plans will be carried out in a manner compatible with our traditional social and political institutions. Let me make that point very clear. All States and Territories are now cooperating with the Public Health Service. All States except one are cooperating in maternal and child health service, all States but ten in service to crippled children and all States but nine in Child Welfare.

"Public support is behind this program. But let me stress, in addition, that the Act contains every precaution for insuring the continued support and cooperation of the Medical profession.

"In the actual administration of the Social Security Act we count on the cooperation in the future, as hitherto, of the whole of the medical profession throughout the country. The overwhelming majority of the doctors of the Nation want medicine kept out of politics. On occasions in the past attempts have been made to put medicine into politics. Such attempts have always failed and always will fail.

"Government, State and National, will call upon the doctors of the Nation for their advice in the days to come.

"It is many long years ago that Mayor Hague and I discovered a common interest in the cause of the crippled child. This great Medical Center is, I know, close to his heart. I congratulate him on the fulfillment of a splendid dream. I congratulate Jersey City and Hudson County on modern facilities surpassed by no other community in America."

From this speech anyone can draw his own inferences as to the Democratic candidate's views on socialized medicine in 1936, with Mr. Early's assurance that they "have in no wise been changed or modified since." Thus, the *Rocky Mountain Medical Journal* by its commendable editorial enterprise has clarified for physicians, at least, a question which might otherwise have remained obscure.

Refrigeration of Human Beings

With the publication in previous issues of the JOURNAL* of the recent work of Temple University School of Medicine in cryotherapy, we present another example of the constructively imaginative questing of the medical mind. Always something appears to be new under the sun until we examine the record. Then, not the thing itself but its uses appear to be novel, its application ingenious. So it seems to be with cryotherapy.

Man is not a hibernating animal, has never been so throughout his recorded history. Nevertheless, the technic practiced by some religious cults and that of some notable magicians has succeeded in producing states of "suspended animation", in certain parts of Si-

beria there is a well-known phrase "to sleep is to eat" All these practices are associated with lowered metabolic rates voluntarily induced by causes varying from philosophic theory to starvation states, sometimes but not always associated with low atmospheric temperatures It is probable that man's early discovery of the use of fire which he alone of the animals has utilized, together with the further use of textiles and skins for clothing, has materially contributed to his ability to exist in low atmospheric temperatures without the necessity for hibernating, to which end also his ingenuity in providing food, his wide range of diet, and the early arts of agriculture and arms advanced him

Just as his lachrymal apparatus permitted him to generate his own sea-water wherewith to keep his corneas moist and thus to emerge from the amphibian state into a whole-time land animal, so his ability to create his own temperature environment by clothing and fire has enabled him to live from pole to pole His adaptability is nearly as great as that of the rat

Now many observers are studying the effects of lowering the body temperature some 16 to 18 degrees below the mean normal As early as 1798* the effects of the cold bath were reported in a case of insanity with beneficial clinical results, but only within recent times has the mechanism of controlled refrigeration been sufficiently perfected to permit careful study, the results of which have been set forth in the JOURNAL's symposium In the issue of November 1, we are publishing a paper on crymotherapy and its relation to hibernation which will review the studies in refrigeration in the light of man's ability as a potential hibernator and the possibilities therefrom resulting In our opinion this is probably one of the most fertile fields of research yet opened to modern medicine

* Med Report London 1798 James Currie M D F R S Edin

We See by the Papers. . .

From *The New York Times*, October 1, 1940

"With City officials and labor leaders participating in the ceremony, Local 802 of the American Federation of Musicians, one of the largest labor unions in the city, yesterday put into effect its hospitalization and medicine program for indigent members in the auditorium of the Manhattan General Hospital

"The new hospitalization and medical program was hailed by the speakers as an experiment that should be an example for other unions

"Mr Morris cited the hospitalization plan as an example of social service in a democracy

"Mr Isaacs hailed it as a 'progressive step marking a new advance in trade unionism'

"Mr Woll said the plan may prove the beginning of a 'great national movement for medical security not only for organized labor but for all labor' "

From *The New York Medical Week*, September 28, 1940

"As described in *The Times*, 'The new plan calls for the division of the city into eight districts, in each of which the union has retained a physician who is also a member of the staff of the hospital. These physicians will pass upon the needs of unemployed members of the local and their families residing in the districts.' There is, of course, no free choice of physician. The practitioners associated with the plan are employees of the union and wholly subject to lay direction.

"If this scheme is extended to the working, self-supporting members of the union we may expect to see scores of schemes for cheap contract practice springing up in other unions, industrial plants, and benevolent organizations. The result will be as demoralizing to the prevailing standards of medical care as the low-grade contract practice which paved the way for compulsory sickness insurance in England."

We begin to "count that day lost whose low descending sun" sets on no new scheme for the provision of "free" or "low cost" medical service. The birth rate is rising so rapidly that one is tempted to examine critically these sblings, these conceptions of the union of Public Welfare and Poverty. The births are acclaimed by the newspapers in a manner to recall the ceremony and fanfare which used to be associated with the advent of a successor to the Crown—with the difference that the physician, in present-day practice, is excluded from the public accouchement. His place is taken for reasons of publicity by presidents of city councils, vice-presidents of labor unions, and sometimes by sociologists, rostrum accoucheurs in the modern manner—so far, so good.

But—what becomes of these little ones? After the accoucheurs have instilled the silver nitrate, packed their portable public address instruments in their little black bags and departed, what then? Does that end their responsibility? What do the statistics of infant mortality say? Do these little heirs of the Crown thrive? If so, the record should be publicly acclaimed! If not, from what diseases do they succumb? Has there been negligence on the part of these modern rostrum practitioners? Have they been zealous in obtaining postmortem examinations? What do the results of

the examinations show? The records should be public property just as the poll books of the general elections are supposed to be. We should be glad to see a scientific study and report made of the infant mortality statistics on this subject.

Medically sponsored experimentation in this field—the distinction is important—has advisedly followed the horse and buggy medical expense indemnity system as a result of much investigation and study with relatively little publicity. A number of planned low-cost infants have been born without benefit of loudspeakers during the last few years—not on rostra, but in the antiseptic environment of county and state medical societies. Of three of them, very careful records of birth and infancy were prepared for the September meeting of the House of Delegates of the Wisconsin State Medical Society.* In “no other state have three different plans been set up on a definitely experimental basis.” The plan was operated in Douglas County as a cooperative. The Milwaukee plan was under the direct sponsorship of the Milwaukee County Medical Society. The Rock County experiment was never placed in actual operation because of lack of subscribers. The report summarizes the status of these medically accouched low-cost infants as of September, 1940, as follows:

“It is clear, however, that the popular demand for sickness insurance which the enthusiasts have always cited does not exist in these typical sections of Wisconsin. The probability is that it does not exist in Minnesota, either, nor anywhere else in the United States.

Reasons given by individuals, who rejected the three plans were economic in nature:

- 1 Lack of proper appreciation or evaluation of the comparative values for budgeting for medical care and of budgeting for such obligations as radio, appliances, and automobiles.
- 2 Physicians’ services during the past several years have not averaged the annual premium costs of \$36 a year.
- 3 Lack of funds on the part of some prospective subscribers.
- 4 Premiums are too high in the opinion of others.”

*Minnesota Medicine, September 1940 pp 661-662

Problems in Conductivity

The use of gaseous mixtures for anesthesia and industrial purposes has created new problems for industry and medicine to solve. These problems arise from the prevalence of electrostatic charges created by materials in motion, and are modified by atmospheric conditions. Not only gases but dust of many kinds may form explosive compounds. Coal mines and grain elevators, flour

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Symposium on Participation in the Public Health Program

PUBLIC HEALTH PERSONNEL

V. A. VAN VOLKENBURGH, M D , Dr P H ,* Albany, New York

(Assistant Commissioner, Local Health Administration, New York State Department of Health)

IN THE past, public health effort was primarily directed toward the sanitation of the physical environment and was concerned with controlling contagious diseases by isolating the sick from the well as a means of preserving community health.

Modern scientific achievement and technologic advance have provided new means of combating disease. Utilizing this newer knowledge, public health practice has gone far beyond early concepts in an effort to fulfill the obligation of health promotion and the prevention of sickness and premature death. Psychologic, social, and economic factors are receiving increasing attention as a challenge to these objectives. The trend toward individual health protection and promotion through organized community effort has become more evident, partly through recognition that one sick individual may vitally disturb the economic and social balance of the family and, similarly, that a group of such families may affect the community itself.

In New York State major activities of departments of public health comprise (1) the control of communicable diseases including pneumonia, syphilis, and tuberculosis, (2) the hygiene of maternity and infancy and the promotion of the health of children of preschool age, (3) the discovery of physically handicapped children and alleviation of their condition, and (4) the control of cancer. Supporting activities include public health education,

supervision of health work and personnel, diagnostic laboratory services, the production and/or distribution of biologicals, the compilation of vital statistics, sanitation of water, milk, and food, the safe disposal of wastes, instruction in nutrition, dental hygiene services, certain clinic services, state cancer and orthopedic hospital care, local and state tuberculosis sanatorium care, and local communicable disease hospital care. Public welfare, mental hygiene, industrial hygiene, and school hygiene are primarily the functions of other departments in New York State.

The servicing of a broad public health program requires the cooperative effort of laymen and of members of professional groups, such as physicians, nurses, and dentists. The majority of these workers are not paid from public funds and are seldom given the credit due them for services in the interest of public health. Outstanding among this group is the practicing physician, since the success of organized public health work is largely dependent on the quality of his skill in diagnosis, his cooperation with public health personnel, and the excellence of preventive medicine practiced by him in behalf of his patients. Services of this order are an essential part of public health but must not be construed as public health per se. The relatively small group earning their livelihood, either partially or wholly, as an integral part of the personnel of a public health department represent numerous specialties. Employed for this purpose in New York State

* With the assistance of Dr. J. J. Bourke, M P H
Assistant District State Health Officer

mills and powder factories have been the scenes of many accidental and preventable explosions which have provoked exhaustive research as to the causes, and the establishment of rigid codes of practice to combat recurrences. The dry-cleaning industry had many fires from the ignition of gasoline vapor by electrostatic sparks until it began humidifying the air of the establishments about ten years ago on the recommendation of Dr Horatio B Williams. He recommended an optimum of 65 per cent humidity, in a paper on this subject in 1930.

Explosions have occurred, however, in operating rooms of hospitals, where the air was humidified and air-conditioned to remove practically all carbon dioxide. Lack of control of static conditions during anesthesia service has been the cause of some fatalities and injuries. The solution of the operating-room problem apparently lies in the prevention of electrostatic discharges, by maintaining all materials at ground potential. This involves necessarily the use of leakage media for stored-up static charges. Conductive flooring, shoes with conductive soles, the floor, furniture, and personnel in conductive connection with the earth seem to be the minimum precautions indicated. Rubber, so much used in operating rooms, is well known for its insulating properties due to a low coefficient of electrical conductivity. Dry tile floors also are poor conductors. Many pieces of operating-room equipment are furnished with rubber-tired casters to reduce noise, presenting a complex problem in the maintenance of low electrical potentials.

It is our understanding that industrial research has produced rubber of the desired electrical conductivity, that terrazzo flooring without treatment of any kind is safe. Compounds and materials offered for sale for use in operating rooms should be fully tested before use under conditions which resemble those in the operating section of hospitals, and after installation should be checked at stated intervals for rate of conductivity. Waxed linoleum is not safe. Bodies or materials in motion over such linoleum must be electrically coupled by flexible conductors, or electrostatic charges may accumulate. No wool or silk clothing should be worn in the operating room at all. Only by the development of rigid codes through exhaustive research and strict enforcement of suitable regulations can accidents resulting from electrostatic discharges in the presence of explosive gases be prevented.

SCIENTIFIC EXHIBITS—1941 ANNUAL MEETING

Applications for space should be made to Dr William A Krieger, 103 Hooker Avenue, Poughkeepsie, New York, before January 1, 1941.

PETER IRVING, M D, Secretary

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der that new information and practices may be placed in use. Moreover, opportunities available in the form of institutes and refresher courses restricted to clinical subjects are similarly valuable not only for public health professional personnel but also for practicing physicians and dentists. With these thoughts in mind, the New York State Department of Health, acting alone or, at times, in co-operation with the State Medical Society and/or private foundations, embarked on a broader course of instruction for public health personnel, physicians, and dentists in an effort to assist in improving the level of public health, medical, and dental practice. Funds employed by the state for this purpose have as their source Federal Social Security grants and, in a few instances, grants from foundations and student fees. Some of the more important training activities undertaken in New York State, exclusive of New York City, are listed below.

Training in Public Health Administration

Local Health Officers, Grade II—These physicians serve townships, villages, consolidations thereof, and cities of less than 50,000 population on a part-time basis. Physicians desiring to qualify, when unable to do so otherwise, may become qualified through successful completion of an extension course in public health given jointly by the Albany Medical College and the State Department of Health. Enrollers are charged a moderate fee. At present, 714 health officers serve the smaller upstate communities. Of these, 92 per cent are qualified, and more than half of the remainder are now enrolled in the extension course which requires a year for completion. Physicians who are not local health officers find the extension course valuable in securing public health knowledge. A number of these enroll each year.

Supplementary formal instruction of qualified health officers is handled through group conferences with the staff of the district state health officer under whom they serve and the annual state conference for

public health officers and nurses. Individual conferences and periodic bulletins are likewise used.

It is of interest to note that a survey of three upstate counties revealed that 43 per cent of the resident physicians held public office as part-time health officer, school physician, or both.

Local Health Officers, Grade I—These physicians serve county health departments and communities having a population of 50,000 and over on a full-time basis. The minimum time within which a physician may qualify as a Grade I health officer is two years and eight months—two years of full-time experience in a responsible public health position and the completion of a postgraduate course in public health approved by the Public Health Council, requiring at least one scholastic year (eight months) in residence. Fellowships at a school of public health have been given to six local health department physicians in assisting them to become qualified as Grade I health officers.

Physicians Preparing for a Public Health Career—Selected young physicians, properly qualified but without public health training or experience, are offered the opportunity to become qualified for junior public health positions. Practical experience and academic training are provided. The practical experience usually consists of from six to twelve months' apprenticeship in two or more state health districts under the tutelage of the district state health officer and his staff, with provision for a month's observation in the central office of the department. Following field training, those showing promise of qualifying for positions as public health officials are given a year's fellowship at one of the postgraduate schools of public health. The degree of Master of Public Health is awarded by the schools for successful completion of the course. Trainees satisfactorily completing both the field training and the postgraduate study are eligible for admission to the New York State Civil Service examination for the positions of assistant district state health officer and

at state and/or local levels are health officers, sanitary engineers, milk sanitarians, statisticians, public health nurses, dental hygienists, dentists, bacteriologists, pathologists, nutritionists, tuberculosis specialists, radiologists, orthopedists, physical therapists, syphilologists, pediatricians, obstetricians, etc., dependent on the need for each particular major or supporting activity

On the public health officer falls the responsibility of determining the public health needs of the area under his jurisdiction, of laying detailed plans to meet those needs including therein the co-operative assistance of all official and non-official related agencies, of obtaining funds to secure the necessary specialized personnel and equipment to service the program, and of organizing the work and directing the staff so as to assure efficient performance. As the representative of the official organized public health agency, he fails in his service to the community if he does not have the complete confidence of all agencies and groups working toward health improvement. He must also have their recognition and respect as an advisory leader through whom public health activities are coordinated. To fulfill effectively these responsibilities in important posts requiring full-time services, such an individual must have, as a background, training and experience in medicine, in the allied humanitarian sciences, and in public health practice, including the fundamentals of organization, administration, and public relations

In New York State even part-time local health officers servicing small population units are required to have a certain amount of public health training and/or experience, in addition to being physicians, in order to qualify for the position. Similarly, the Public Health Council has established qualifications for public health nurses, professional laboratory personnel, dairy and milk inspectors, operators of public water treatment and purification plants, and operators of public sewage treatment plants. High standards of state-employed personnel—both public

health and clinical—are maintained through qualifications established by the Health Department in conjunction with the Department of Civil Service

It is significant that the protection and promotion of public health is a recognized governmental function. Aside from legal and other implications, it is important in that official health organizations operating at local levels are directly integrated with the official state organization and thus, in turn, with the official national organization in much the same fashion as other governmental agencies. It is, therefore, generally possible to obtain certain advantages such as unification of the health program and of control regulations, standardization and maintenance of satisfactory public health practices, establishment and maintenance of personnel qualifications, etc., at least within state borders. Moreover, local health jurisdictions may benefit through state and federal subsidy, particularly where local funds are inadequate. Such subsidy may be direct, through funds or personnel, or they may take the form of shared costs for county public health activities and for laboratory and tuberculosis hospital services

Much of the foregoing discussion may be of interest in considering possible differences, advantages, and limitations relative to the participation of public health personnel in the public health program as representatives of an official organized agency. As previously stated, the servicing of a broad public health program requires the services of everyone. Each has his part to play, the one supplementing the other in an effort to promote health and prevent sickness and premature death

Previously, public health education was mentioned as one of the supporting activities of the listed major activities of health departments. It was mentioned first because of its importance in public health work. It is the keystone of each public health project. Equally important is the education of public health personnel, both in the form of initial instruction and in providing continued instruction in or-

Statisticians—In order to supply statisticians with some public health background so that they will consequently be better able to interpret epidemiologic studies and to handle medical data, the department has felt the necessity of providing special postgraduate study at a school of public health for selected individuals. This year 1 statistician is attending the Johns Hopkins School of Public Health on a foundation grant, and it is hoped that funds will be available in the future to send others who lack this specialized training.

Local Sanitation Department Employees—As previously mentioned, the State Sanitary Code prescribes qualifications for employees of departments of sanitation. Included therein, provision is made for accepting approved scholastic training in the particular field concerned as partially meeting the requirements. To satisfy the need for such courses, the department, in collaboration with Cornell University, New York University, and Rensselaer Polytechnic Institute, has arranged to give instruction periodically. Enrollers are charged a nominal fee. Applicants desiring to qualify as dairy and milk inspectors, operators of public water treatment and purification plants, and public sewage treatment plant operators are thus assisted, and the competence of such operators in the performance of their duties, as well as protection of the public health, is better assured.

Training in Clinical Subjects

Within the limits of available funds, conscientious efforts have been made by the State Department of Health to improve the knowledge of both staff members and practicing physicians in clinical subjects.

Communicable Diseases—Recently, arrangements have been made with the Willard Parker Hospital, New York City, whereby each year 9 members of the staff of the state department will complete a one-month refresher course in the diagnosis and treatment of communicable diseases.

Obstetrics—Through similar arrange-

ments with the Margaret Hague Maternity Hospital, Jersey City, we are now able to provide a three-months' refresher course in obstetrics for a limited number of practicing physicians in an effort to improve the practice of obstetrics in rural areas.

Orthopedics—Special training in orthopedics is provided by the department's Division of Orthopedics. Each year a few members of the field staff of the state department are assigned to that division for two months of observation and instruction.

Tuberculosis—The State Department of Health provides special training for those who are primarily interested in tuberculosis. Since 1937, 16 physicians who are specializing in this disease have been accepted for one year of training at state tuberculosis hospitals. Of these, 7 have completed training and 3 are undergoing training at present. The remainder resigned before completing a full year's work.

Syphilis—Through funds made available by the Federal Venereal Disease Control Act, a total of 499 physicians have received special instruction in syphilis since 1936. Instruction for 436 of these consisted of one-, two-, or three-day institutes given in relays in various cities throughout the state. For 6, the training consisted of an academic year at school, for 12, four months, and for 45 others, two months.

Pneumonia—The Bureau of Pneumonia Control of the State Health Department estimates that the attendance at meetings, institutes, and conferences on pneumonia held for physicians in upstate New York since 1935 approximated 9,000. A total of 268 such meetings were held.

Dentistry—This year the Division of Maternity, Infancy and Child Hygiene has arranged a series of one-week refresher courses in children's dentistry for dentists practicing in small urban and rural areas where clinics and facilities for postgraduate study are not readily available. Tuition and a small stipend are provided. The division has so far been

epidemiologist in the State Department of Health

To date, 56 novices in public health have been accepted for training. Four of these had completed the academic course before the department accepted them for field training, 32 successfully completed both the field training and academic course under department auspices, while the remainder include those now in the first or field-training phase of the training program and those resigning before completion of the training program.

Because it was believed of interest to cite the present activities of these 56 individuals, each case was reviewed. It was found that 43 are engaged in public health work. Of these, 7 hold responsible positions in federal, county, or city health departments, 1 is a member of the staff of a school of public health, 25 hold appointments to the staff of the New York State Department of Health, and the remaining 10 are undergoing field training with the department preparatory to going to school in the fall. Of the 13 found not engaged in public health work, 3 resigned to enter private practice following appointment on the staff of the department, and 10 resigned for various reasons while undergoing training and presumably are practicing medicine.

Special Staff Training—Members of the department staff are also offered opportunities for periods of study in specialized branches of administrative public health and are encouraged to keep abreast of new developments in the field of public health science. Five staff physicians have benefited by a year of postgraduate study at a school of public health.

During the past year, 35 members of the field staff attended monthly two-day conference sessions at the Maxwell Graduate School of Citizenship and Public Affairs, Syracuse University. This course provided instruction in law enforcement methods, personnel and office management, addresses and group leadership, public reporting, news release preparation, personal contact methods, and radio broadcasting techniques.

Other opportunities for education and the stimulation of interest of staff members are provided by quarterly conferences of all administrative field personnel. Particular phases of public health practice are discussed. Within the limits of available funds, representatives are sent to meetings of other groups, notably those of the American Public Health Association, American Medical Association, New York State Medical Society, and annual meetings of specialty groups.

Training in Special Fields of Public Health

Public Health Nurses—Through the use of Federal Social Security funds, the State Department of Health has established a training program for public health nurses. Since 1936, 349 experienced public health nurses have received postgraduate training for periods varying from six weeks to four months. The shorter course covers social hygiene and maternity and infancy nursing, the four months' course covers training in the principles of public health nursing and in supervision. Of these 349, approximately 100 were members of the staff of the department, the others being employees of such agencies as city departments of health, county health departments, visiting nurse associations, hospitals, and education departments.

For nurses who have had no experience in public health work, a course of training analogous to that for physicians just entering the field of public health has been organized. Trainees receive supervised field training and also a residence course in the basic principles of public health nursing for one semester at a school of public health nursing. To date, 58 nurses have completed academic training. These trained public health nurses serve as a source of supply for local and state needs.

Laboratory Technicians—The Division of Laboratories and Research of the State Department of Health maintains a training school for laboratory technicians, offering a two-year course. An average of 5 individuals take advantage of this opportunity each year.

- 2 They are regular fellows once you get to calling them by their first names
- 3 They will not accept short-cut methods which practitioners often utilize, statistical methods would be jumbled
- 4 They disagree among themselves as to what a statistic is
- 5 They could very nearly wipe out tuberculosis if they had 100 per cent cooperation from the practicing physician. The same applies to venereal disease, if they could dethrone Venus
- 6 They are extremely anxious to know the practitioners better, to utilize the many services which he could perform, to compensate him in some small way for the time consumed in performing them. The means of accomplishing the latter item, however, escapes them. Every health officer knows that the State pulls a tight

purse string—especially on traveling expenses

Is there an answer? I believe so. It comes from my above-mentioned experience. The Health Department must realize the need for personal contact individual personal contact, instructing contact, with the man who must of need practice the healing art as such. Once such personal visits are made to each doctor in practice by a liaison officer, preferably one who has spent the greater part of his professional life in actual practice, results will begin to be manifest. Once the family doctor is shown how to perform the functions expected by the health office, shown by classroom work and by personal follow-up visits, he will begin to realize the importance of the cog that he represents in the gearing of public health machinery. But, most important of all—or at least as important—must be public recognition of his services in the form of some sort of remuneration. A crass thought? Perhaps so. But we are looking for action, aren't we?

THE CITIZEN

KENNETH D. WIDDEMER, New York City

(Director, Committee on Neighborhood Health Development)

THE growth of interest in the citizens' participation in the public health program is a product of progress and change—progress in the rapidly growing knowledge of medical science, change in the methods of providing health service and protection.

There is a general stirring in many parts of the country in the direction of broadening this participation. The impetus comes from our health leaders—national, state, and local. It comes from leaders in the medical profession, interested in helping to extend the benefits of new discoveries of medical science.

There was a time when the activities in public health were primarily in the hands of one person—the health officer—and his task did not extend far beyond the limit of environmental sanitation, isolation and quarantine of the people with loathsome diseases. The general public's

part was limited to a feeling of forebearance when people lacked good health or were taken sick, and to prayers of thanksgiving for those who were left after an epidemic had burned itself out.

Thanks, however, to men and women of science, weapons of defense against disease have been forged, aids for the alleviation and cure of disease have been produced, the physician has added social science to his art and is now seeing, besides the patient, the family group as a unit of the community. The citizen is being awakened by the private physician and the newer programs of public health, and better understands that there is more possible in the attainment of good health, disease prevention, medical care, and the postponement of death.

The developments of science have been so rapid in our laboratories, hospitals, and in our medical institutions

ments and medical societies to warrant further concerted action between the medical and health groups at the present time. There is a growing realization of the responsibilities and opportunities facing those who are engaged in solving the complex problem of health production through sickness prevention and disease elimination.

Discussion

Dr Joseph P Garen, *Saranac Lake, New York*—Dr Thomson has restated and clarified to a great extent the axiom to which we all subscribe, namely, that health department workers and private medical practitioners are striving toward the same general objectives, and both groups are thoroughly sincere in their efforts to attain these objectives. Needless to say, the objectives are the prevention of disease, the cure of disease, the alleviation of suffering, and the promotion of health.

It has often been said that the interests of the medical profession are quite circumscribed. It is claimed that physicians are not interested in preventing disease and promoting health, except insofar as they supply preventive medical measures to those who specifically ask for and presumably pay for them. This, of course, is not true. The medical profession as a profession and physicians as a group are very much interested in disease prevention and health promotion as applied to the public at large. Individual physicians may think in terms of individual patients, but through their organizations they think largely of the public as a whole.

In Dr Thomson's paper he advances some arguments in favor of the proposition that clinical public health work should be done largely by the private practitioner, on a part-time basis. There is much to commend this, and, as a matter of fact, a great deal of the clinical public health work in New York State is done in just this way. There is nothing about a full-time employee of an official or unofficial public health agency that automatically makes him better than the part-time man who works for a stipend, a small salary, or sometimes for nothing. It is unreasonable to assume that a physician who is a full-time health official is also always an expert in the several clinical fields. On the other hand, experience has demonstrated that the part-time worker in administrative public health is usually not very successful. By administrative public health I mean project planning, direction, supervision, record keeping, paper work, and also, to a large extent, public health education.

Public health administration is a specialty, just as much as is surgery, or neurology, or cardiology. Like all other specialties, it must be done on a full-time basis to be done right. The day of the general practitioner doing surgery on the kitchen table is long past, and the day when a physician was considered, by reason of his medical diploma, to be an expert in the field of public health administration is also now past.

It is the opinion of many members of our profession that the mutual objectives of the public health agencies and organized medicine will best be attained by a continued and increased emphasis on full-time administrative personnel, acting for and with both full time and part time clinical public health personnel, the latter composed of individuals who are members also of that very large segment of organized medicine known as private practitioners.

Dr Frederick S Wetherell, *Syracuse, New York*—Dr Thomson has set for us a problem in question form. He has asked whether there is not a need for and a method by which we can establish a closer relationship between the public health official and the private practitioner of medicine. Both, says Dr Thomson, and I am in total agreement with the statement, have a service to sell each other, the public being the final beneficiary of the proposed combined effort. It is probably true that the health officer is better informed as to what this correlation of effort should be than is the family doctor, it is constantly on his mind because of the very type of service which the state expects him to perform. The physician who is primarily interested in making diagnoses of disease and in finding means of caring for his patient has only a vague knowledge of the complexities of public health administration. He feels that the job is well taken care of by men who are paid to do it. We may like it or not, but there is always a certain, even though small, degree of resentment when one group, a paid group, asks another group to do a number of chores in an entirely altruistic, yet, time-consuming spirit. While this may be put a bit too bluntly, it is nevertheless true, as one can ascertain by eavesdropping when the general subject under discussion is batted about in a group of practitioners.

A few years ago I had the pleasant experience of working on a fact-finding committee consisting of three practitioners and three health officers. Having finished our investigation after many hours of agreement, and no few minutes of congenial disputes, I came to certain conclusions which I here present.

- 1 Health officers are physicians,

tee members, according to Mr Webster, are citizens. However, from the standpoint of our objective in bringing about greater participation on the part of citizens in public health, I think it is equally clear that we have in this analysis a mixture of professional and civic leaders and lay citizens. It is obvious that we cannot organize all of the residents of a neighborhood but must depend upon limited groups of the citizenry to take the leadership which will open up the channels to individuals in their organized groups and in their homes.

And now, what is the opportunity? What are some of the things citizens do to promote understanding and participation in the local health program?

A citizen living in a district of the city where the tuberculosis rate is five or six times that of any other district has a right to know that fact. He has a right to feel that he ought to do something about it himself. If he is a real citizen and lives in a district where the infant death rate is abnormally high, he should be informed of that fact and should know why and concern himself with the facilities that are available in his district to improve conditions.

The citizens of a neighborhood must have a well-conceived program if they are to take an effective part in public health. They must have a manageable organization, and above all they must be provided with facilities to implement their work.

Naturally, for illustration, I turn to New York City where this work has been under way, as a part of the official program, for about three years.

Let me recall again, the framework of localized health administration. The Health Department is now decentralizing its services within new, modern Health Center buildings, under the leadership of full-time health officers. At once we see the heightened visibility of the public health service brought to individual neighborhoods of manageable size, with a base of operation—the district health center—from which citizens can take a part in the health program.

The plan of organization of the district health committees now organized within seven of the city's thirty health districts is not complicated. There is a general committee of from 40 to 50 citizens (physicians, dentists, educators, librarians, clergymen, nurses, civic and social workers), under the leadership of a competent chairman and with the necessary assistance of a paid field secretary, all working together with the local health officer to bring their strength to the local Health Department and through which the disseminate health education, guidance, and stimulation.

The organization of citizen groups to be effective must be suited to the particular circumstances of the community which they serve. In New York City, as a matter of effective organization, these groups of leaders of nonofficial agencies and citizens as individuals carry on their work through subcommittees which follow the broad lines of the Health Department service. They are committees on Maternal and Child Care, School Health, Tuberculosis, Social Hygiene, and Community Health Education.

It is through these neighborhood committees that leaders are brought together for the planning and action to reach out into the highways and byways of their neighborhoods to channel health information to the homes of the residents.

The district committees work through institutes led by experts in various fields to inform leaders and workers of the latest developments in the Health Department program and in the health field generally.

To assist in determining the health needs of their districts, local studies are made such as Health Along the Water Front, Local Hospital Needs, Physical Defects of School Children, Nutrition, Infant Mortality, Neonatal Deaths, and Registration in Prenatal Clinics.

The committees conduct campaigns to arouse interest and claim the attention of local groups unreached through regular activities of the Health Department. The Early Registration Campaign for

that the great problem we face today is to make those facts the real possession of all of the people. It is only as we translate the facts that we have now into the daily lives and habits of the people that we will really succeed in our preventive health and educational programs.

We have often been reminded of late that the modern health program has a three-fold responsibility—that of doing health things to people, doing health things for people, and in getting people to do health things for themselves.

To accomplish this, it is important that not only public health personnel but the medical profession and the citizen shall all participate and work together on this vital public health program, for no one of the three can fully accomplish the job alone.

But for practical purposes, when we say the participation of the citizens in public health, just what do we mean?

After all, you will say, there is nothing very new about citizens in public health. We can trace the beginnings of all of our health and hospital aids, as we now know them, back to the efforts of small groups of public spirited physicians, professional and civic leaders.

But in the challenge which is before us, there is perhaps this difference. Aren't we now seeking to go beyond the handful of such leaders in each community who after all have been endeavoring always to do things for people and to bring about gradually the situation in which, more and more through education and understanding, the rank and file of the citizens learn to do things for themselves, to take part in the procedures which lead to better individual health. This means, does it not, for the lowest income groups, better knowledge of the early use of preventive and educational health services, provided by the community. It means for the others, the greater part of the population, not only full understanding of the benefits of medical science but the will to seek that aid from its source—the family physician.

This participation of citizens in doing health things for themselves will not just

happen because it is wise that it should. And this brings me to the development of organized citizen participation as a recognized part of the official public health program of New York City and to the often-asked question "When we say citizens in the health program, just whom are we talking about?"

We have in New York City, working within the Health Department's health administration districts, seven district health committees, with an active membership of over 1,400 volunteer workers. Of this group, I think we would all agree that the 300 businessmen, labor representatives, parents, youth leaders, civic minded citizens who are daily taking an active part in the educational program of their local health centers would clearly be recognized as the beginning of lay citizen participation in the health program.

But also there are the 200 busy physicians and dentists who go to the health center in their district to aid in developing programs to strengthen the tuberculosis and social hygiene work of the Health Department, to guide youth groups and stimulate their interest in health, to advise on new methods of teaching mothers to care for themselves as well as their children, and to work out new methods of providing more adequate dental service for the school children. Are these busy professional men and women citizens?

May the 350 or more educators, librarians, clergymen, leaving their own jobs in order to help local committees think through constructive programs be listed as citizens on the job for health?

Are we to consider as citizens the 550 nurses and social workers who at the end of a day full of difficult problems, willingly stay overtime to attend lectures and meetings which they have had a part in planning at their health center so that they may be better equipped to do their job?

The dictionary's definition of a citizen is "an inhabitant of a city or town, especially one who enjoys its privileges." This is clear enough. All of the com

meant in relation to health and to arouse in them a desire to trade in shops where food was handled in a clean way. A request to the various groups of parents, church clubs, and women's auxiliaries in the community brought women volunteering to work under the "Fight Disease with Cleanliness" slogan. The message to the buyers of food went to the homes in the community through various channels, four libraries gave it to 2,000 adult readers, Department of Health nurses gave it to 500 mothers visiting baby health stations, and the Henry Street Visiting Nurses distributed it to several hundred homes. Mothers frequently asked for additional copies to give to their neighbors.

In order to secure an estimate of the campaign from the point of view of the housewife, the local school health committee sent a brief questionnaire to the same homes to which handbills had previously been sent asking if improvement in food handling by the shops had been noted. Of the 12,000 questionnaires sent home by the schools, 6,631 were returned. Of these, 82 per cent reported improvement.

These are but a very few illustrations of the ways in which the citizen committees have attempted to accept the invitation and the opportunity offered by our New York City Health Department, the voluntary health agencies, and the medical profession to become partners in the public health program.

In proportion as we succeed in achieving this broad aim in which the citizens must take a more and more active part, we shall have happier, healthier children, happier, healthier marriages and more contented home life and more efficient parenthood, more productive economic workers, as less poverty results from unnecessary illness, and a better standard of living.

Discussion

Dr Leverett D Bristol, *New York City*—In New York City's district health administration program I like to think that the Commissioner of Health has two strong arms of service—(a) his

official family or Department of Health and (b) a large group of voluntary workers who not only are willing but also eager to follow his leadership in promoting the utmost in health and well-being for the people of New York. In this latter group are numerous members of the organized medical, dental, and nursing professions, as well as representatives of unofficial health and social agencies, business organizations, churches, schools, and hospitals. Through the efforts of the Committee on Neighborhood Health Development many of these volunteer workers and interested citizens in general have been organized into district health committees.

District health committees represent voluntary citizen participation and cooperation in the work of the Department of Health and its district health centers, without which complete attainment of public health objectives and ideals can never be reached, even though a city may have the best official health department in the world. A health department can be a useful and effective factor in a community sickness prevention and health promotion program, but it cannot, by itself alone, completely carry through such a program. In other words, the only people who can promote and maintain the personal health of the individual citizens are these very citizens themselves under the leadership of the medical profession and the constituted health authorities. A properly organized and efficient community health program must be carried on and taken part in by every individual member of the population.

In curative medicine, especially its surgical phase, the doctor operates on the citizen or patient, who even in ordinary sickness must be more or less *passive* for his own good. In preventive medicine and public health the physician and health officer must operate *with* the citizen, and the latter must be *active* and alert! He must be brought out of his ether of ignorance and become thoroughly health conscious and wide awake in all matters pertaining to his physical and mental well-being. He must learn to seek early medical diagnosis and advice when anything is wrong and to have periodic health examinations even when he feels well. He should take advantage of all known protective or immunization methods and develop those health habits, including adequate nutrition and living conditions, that will be most conducive to a long, happy, and useful life.

The District Health Committee is a double-track, two-way organization through which (a) the Health Department serves the citizen and (b) the citizen helps the Health Department. Some of the outgoing services have been suggested above, including the carrying of health education

Maternal Cases, the Anti-East River Swimming Campaign to prevent infection from polluted water, the Learn to Swim Campaign to reduce swimming accidents, Youth-Fight Syphilis Campaign to break the taboos and give youth groups an intelligent understanding of the problem are but a few illustrations.

They cooperate with the local health officer in continuous educational programs for various age groups through health lectures for parent groups, courses on summer care of babies, lectures for youth groups, and health projects in the school classroom.

Let me give you one or two brief instances from among the many activities of our local committees.

Because of the high infant mortality rate in certain sections of East Harlem which has a large Porto Rican colony, a program was arranged under the leadership of the district health officer to educate the Spanish-speaking mothers to the necessity of taking their babies to their family doctor or to the Health Center for regular health supervision. Businessmen and citizens in the neighborhood working through the District Health Committee made available fourteen large billboards on which posters carrying the slogan—"I want to be a Healthy Baby"—were displayed as the central theme of a continuous community-wide educational campaign in which Parent-Teachers Associations, Mother Clubs, Shopkeepers, and Social Clubs took an active part. The Mayor wrote to the district health officer and the chairman of the local committee that he had noted the poster and congratulated the local committee on this "visible evidence of community interest and participation in the city's health program."

Social hygiene campaigns have been conducted in a number of districts. The most dramatic was carried on in the Kips Bay-Yorkville area, where the committee has been giving its attention to assisting and guiding the "Youth-Fight Syphilis" Campaign. Under the guidance of the district health officer and a special medical advisory committee, the cam-

paign opened with a mass meeting at which the Commissioner of Health spoke in the neighborhood high school. The progressive attitude of the youth groups was dramatically illustrated by slogans contrasting the modern concepts with the "horse and buggy" point of view. Town criers dressed as Father Knickerbocker canvassed the neighborhood. A horse and buggy driven by a boy and girl dressed in the costumes of the early nineties advertised the meeting. Electric signs in the neighborhood flashed the announcement. The enthusiasm, ingenuity, and courage with which the youth groups attacked the problem gave evidence of their ability to organize and carry through their plans. An interesting feature of their campaign was that the youth squads in the various clubs raised the necessary funds to meet expenses. Thirty-five clubs in the district cooperated in the campaign.

On the Lower West Side a study of "Health Along the Water Front" was the challenge that brought the local Industrial Hygiene Committee into being. The bad industrial health of marine workers, aggravated by idleness due to the War, was recognized by the National Maritime Union. A plan of action was carefully worked out by leaders of the local professional and citizen groups and then presented to the directors of the Bureau of Tuberculosis and Social Hygiene of the Health Department. The United States Public Health Service has given its wholehearted support to a mass x-ray project for 40,000 seamen and has secured permission to reserve beds for those found to be in need of hospitalization. This case-finding project is now being carried forward by the Department of Health in cooperation with the National Maritime Union.

The Cleanliness Campaign in the Mott Haven District aimed to inform food dealers concerning proper methods of handling ready-to-eat food and to stimulate them to have such methods carried out in their shops. It also aimed to make buyers of food aware of what sanitary and unsanitary food handling

would indicate that the goal of the school physician in the public health program has not been clearly defined

Certainly his function is not as clear-cut as the physician in the field of tuberculosis or venereal disease. In each of these public health fields the physician is confined to the discovery of a single disease. Methods of identification are on a fairly objective basis and programs for the control of these diseases have brought measurable results. The specialists in tuberculosis and venereal disease, moreover, have employed modern laboratory methods to isolate cases from among the masses. By contrast, the school physician's field has included the "whole" child, and his only case-finding tool has been the physical examination. Results in school health programs have been measured by the number of defects found and corrected. To add to the school doctor's predicament, the administrator has frequently burdened him with so large a case load and given him so little time to work that the school examination as a defect-finding method has had little accuracy. One health officer has said "The school medical officer spends hours in the monotonous task of examining well children, presumably hoping that he may uncover some potential defect at a stage when a medical Demosthenes could not convince the parent or guardian of the significance of his findings!"

This idea of the school physician as a defect finder has been commonly accepted as his function. It has been kept too prominently before the public. The significance of the usual defects reported among elementary school children has been overrated. The administrator has measured the school health program in terms of how many examinations can be made or how many tonsil defects, nose defects, nutrition defects, or heart defects can be discovered. The school physician has been reluctant to admit to the administrator that many of these "defects," on further investigation by private or clinic physicians, are found not to be defects. Physical defect find-

ing has been the cornerstone of most school health programs and defect finding the one and only function of the school physician. Actually he has a far more important role.

The school physician can be of greater service by being given the opportunity in the school to give information and to change attitudes about health. This should be his primary function in his day-to-day contacts with parents and children, with educators, and with school nurses. To date, the school has hardly tapped this resource of medical knowledge.

After four years of careful study, we have a better knowledge of the function of the school physician in the New York City program. He is not a medical inspector or a defect finder. The school physician is a medical adviser. We now see the school child where we once saw only a physical defect. We now know that a child with a physical defect is a child with a health problem.

Are these new labels on the old bottles? What do we mean when we describe a child's abnormal health condition as a health problem rather than a defect? What do we mean when we call the school physician a medical adviser? These terms are not merely better words. They give insight into the real nature of the school health service and the work of the physician. They make it easier to understand the physician's function in the school as an adviser.

The Importance of Daily Observations by the Teacher

In the elementary schools health problems are discovered by the classroom teacher and nurse in their day-to-day contacts with children. The child who is losing weight, fatigued, or absent frequently with vague illnesses is brought to the school physician. Many times the best opinion he can give is that because of these symptoms, medical attention is advisable. He cannot be sure that the child has a disease. As a medical man he knows that further investigation should be made. A child with the

and department interpretation to the community. As an incoming service, the citizens make up the eyes, ears, and voice of the district, and through their advice and assistance on local health problems and needs the Health Department is able to develop and direct a constructive and increasingly effective program.

Dr William M. Patterson, *New York City*—While the neighborhood rallying of the citizen element in the interest of good health is not new, still I doubt if it has ever attained the momentum and intensity of effort it has at present achieved. Never has so much emphasis been put upon a civic problem by well-organized professional and lay groups to arouse citizen cooperation as in this matter of good health. The average citizen is now being informed on matters pertaining to his welfare and health that he never heard of before or at most had only a hazy idea of what it was all about. He is being educated along the line that the Department of Health, under the leadership of Dr. John L. Rice, is his agent and willing to help him solve all problems pertaining to his health or, at least, to help him as best it can, placing at his disposal proper facilities for his use and showing him that the Department of Health is something more than an organization solely intent on gathering statistics.

It is this constant hammering without letup that gets results and makes for a continuance of a permanent citizen interest in matters of health, of value not only to himself but to the entire community of which he is an active part. In the dissemination of this knowledge we are indebted to the services being rendered by the various medical, welfare, and citizen groups acting mostly as voluntary aids working with the Health Department. These organizations are represented in each health district by the District

Health Committee composed of a representative from each group, professional and lay. This Committee meets several times during the year to discuss and plan ahead. Definite programs are arranged to meet the various problems peculiar to the district in which each operates, all working with the help and guidance of the health officer of the district. In my own district, the Lower West Side, we have had very active and effective work done by our District Health Committee. This month we expect to meet at the health center to hear the health officer review the work accomplished in the district during the past three years by the Health Department, and the field secretary will tell us of the activities of our district committees in which citizens have taken part and worked with the Health Department in the development of the public health program.

Let us continue to push forward so that not only ourselves but every citizen will take a deep and sincere interest in his own health and in those of others in his neighborhood. Let us point out what it means to him and to his neighbor to keep a check on each other in the matter of observance of the laws of health both man-made and natural and what follows when we disregard or otherwise become lax in small things that in sum mean a great deal to the community as a whole. We must also see to it that he gets his information from the proper source, i. e., his family physician, neighborhood health center, or a recognized welfare organization, for it is only by correct information obtainable from reliable sources that he can be assured that he is walking the straight and narrow path that will lead him to an intelligent appraisal of his own health needs and to apply himself properly to a neighborhood interest that will result in greater benefit not only to himself but to the community in which he lives.

THE SCHOOL PHYSICIAN IN THE PUBLIC HEALTH PROGRAM

GEORGE M. WHEATLEY, M. D., New York City
(*Pediatric Consultant, New York City Health Department*)

THE school physician has been in the public health program forty years, yet his function still appears to be ill-defined. At various times he has been described as a clinician in the educa-

tional system, a medical inspector, a diagnostician concentrating on children of school age, a defect finder, a medical educator, a medical adviser in the school. The variety in the meaning of these titles

*Read at the Annual Meeting of the Medical Society of the State of New York,
New York City, May 8, 1940*

vironment of the school, the value of the medical or "health" examination. This is not a new thought. The school examination has often been referred to as a health examination, but in reality would any educator or physician claim that the usual five-minute going over of the child is a health examination? If the examination in the school is to be a real demonstration of the medical examination, it must be an educational experience for the parent and child. Our efforts for improving the school examination should not be in the direction of aping the searching clinical and laboratory investigation which it is possible for the clinic or private physician to do. Our efforts should be in the direction of remodeling the much abused school examination into a positive learning experience for the child and parent. Nor should the school attempt to carry out this demonstration procedure as an annual affair. The annual examination will always be a luxury in the school-age group. The demonstration in the school of the examination of an apparently well child should aim to teach the family to expect more of this kind of service from their own physician, whether he is in a private office or clinic.

If the school medical examination is to be a positive teaching device, it must be made a satisfying and a learning experience for parent and child. One of the basic laws of learning is that the individual to be taught must have a readiness to learn. This receptiveness must be cultivated by the school health service even before the physician sees the parent or examines the child. Learning may be blocked through thoughtless preparation for the examination. The child can be prepared by classroom discussion of the examination, by an understanding on the part of the teacher of the procedure of the examination. The teacher's own attitude can be improved if she herself has had a periodic medical examination. The parents' readiness to learn may be developed through careful phrasing of the printed notices which are sent home. A definite appointment

for the medical examination, a comfortable chair during the interview with the physician, a courteous reception when she arrives for the appointed examination are all details that set the stage for education to take place. None of these details can be taken for granted. The learning process stops when there is annoyance or irritation.

In addition to the preparation of the parent and child for the examination, other important elements in making the school medical examination an educational process are (1) the physician's interview with the parent, (2) his attitude toward the child in the procedure of the examination, and (3) the information that he transmits to the classroom teacher and to the nurse to enable them to take care of the individual health needs of the child.

In the interview with the parent, the physician elicits the history about the child, covering the child's development, his illnesses, the health of the members of the family, and the child's living habits. This history taking establishes rapport with the parent, which is very valuable when it is necessary to recommend medical attention for the child. It is also a means of impressing the parent with the importance of knowing how the child functions and about his background in order to estimate his present health status.

Because he asks about the health of other members of the family, the school physician may discover the need for protective health measures among younger or other members of the family. He frequently discovers younger pre-school children who have not received medical supervision or who have not been vaccinated or received diphtheria immunization. Sometimes an older member of the family will be described as having had a chronic cough which has never been investigated. One of his best opportunities for health guidance occurs when errors connected with the child's living and eating habits are disclosed. Some insight into the magnitude of this problem was given by the report in 1934 of

symptoms just described may be discovered to have diabetes, rheumatic fever, or he may not be getting sufficient rest. It is more important to refer him to his own physician for further study or treatment than the child with innocent tonsils.

More attention is being paid, therefore, to the day-to-day physical and mental function of children. About half the physician's time in the school is given to examination of children who are selected by teacher and nurse on the basis of signs or symptoms or other information suggestive of poor physical function. The New York City Board of Education recently introduced a pupil health record to promote the day-to-day observation of her pupils by the elementary school classroom teacher. The examination of children selected by the teacher and nurse has been found to be a more productive use of the physician's limited service than the routine examination of every child in the class. Through this process of selection, many children with emotional and behavior disturbances may now come to the school physician's attention. In fact, a study made of teachers' day-to-day observation of pupils in a group of schools in one district revealed that more than 40 per cent of the reported observations were behavior or emotional signs and symptoms. Many of these children are normal. This gives the school physician the opportunity to explain normal child behavior to the teacher. Some of this behavior responds to relatively simple adjustment within the school when a physician with knowledge of child behavior can give understanding to a principal and teachers. Other children with these signs or symptoms require specialized care of mental hygiene or child guidance clinics. Physical defects are found, of course, but now they can be correlated with the child's day-to-day function and have, therefore, more medical significance.

A Health Problem Calls for Solution

A health problem challenges the physician and nurse for solution. A defect

challenges no one but the statistician. After identifying a health problem the school physician is expected to lend his professional experience to working out a plan and his professional authority to back up the plan for follow-up. Here is a real opportunity for education of the parent. It has been frequently stated that education in health is measured by whether or not the acquired knowledge leads to action. When the parent takes the child for medical attention on the school physician's recommendation, education has taken place. When the physician works out a solution for a health problem which involves the parent and the school nurse, and sometimes the teacher and principal, he is accomplishing a practical feat of educating all of these individuals. These are the reasons why we prefer the expression "health problem" rather than "defect."

The emphasis in the past on making more and more examinations has given the physician little time to utilize the school examination as a real teaching device. Health teaching at the time of the examination has been left to the already overworked school nurse. The New York City program has deliberately sacrificed production in terms of examinations performed in order to provide the school physician with the time and the opportunity to carry out this practical health education. We want parents to attend the school examination. This fall about half as many examinations were done as last year, but parent attendance at the examinations increased from 30 per cent a year ago to 60 per cent this year. Each parent who attends the medical examination represents an opportunity for the physician to give information and to change attitudes about health in a family.

Teaching Health Through the Medical Examination

How can the school medical examination be an instrument for public health education? First of all, it is an opportunity for the Health Department to demonstrate within the educational en-

which discover and re-discover the presence of defects, about which nothing is done by the parents or by the school" To prove that talking with parents is productive, our results in a recent survey show that of children who were examined by the school physician with the parents present during the months of September through January, by the end of the school year five months later, more than half had received the medical attention that had been recommended

Additional educational opportunities exist for the school physician in the public health program More frequent conferences by the physician with the principals and teachers would promote a better understanding of health by the teaching staff Principals carry a great responsibility from day to day, and there should be opportunity for the school physician to discuss health matters with the principal Teachers will give more attention to the day-to-day health of their pupils if the physician can occasionally confer individually with them The school physician might do much to quicken the interest of the private physician and the clinic by having the opportunity to explain the purposes and methods of the school health service and other phases of the public health program

The elementary school physician has been a part of the public health program for most of the life of modern public health Yet his light has been long hidden under a bushel of defects It has been thought that his only contribution is defect finding Most school health programs have not given him a chance to identify accurately health problems among children Rapid, superficial inspection of children has given us statistics on dubious defects Most school health workers now believe that this has not been the correct emphasis in the school health program In fact, some public health workers, on this basis of past performance, are skeptical of the value of school health work There should be no doubt about its value If public health means public health educa-

tion, the school medical examination is a golden opportunity

Summary

Therefore, the school physician need no longer be thought of as a medical inspector He is a medical adviser He is concerned with learning how the child is functioning in the school To learn this he makes use of the teacher's knowledge of her pupils and the nurse's information of the children He advises the school authorities as well as the parent of the significance of his findings His medical examination can be made a demonstration of a health examination by exploiting all the educational opportunities that it possesses A friendly reception of the parent, kindness in the examination of the child, an interview by the physician with the parent to elicit history, answer her questions, and to plan for necessary medical attention, exchange of health information with the teacher—all are necessary to make the examination a teaching experience This is the unique contribution of the school physician in the public health program

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- 2 O'Neill F C., and McCormick Mary G *Univ State N Y Bull*, No 1057, 28-55 69-86 (Dec. 1) 1934.
- 3 Swackhamer Gladys V Committee on Research in Medical Economics May, 1939 page 4.
- 4 New York State Health Commission 1932

Discussion

Dr Cyrus H. Maxwell, Jr, *Albany, New York*—We are indebted to Dr Wheatley for an intelligent leadership in school health service. In New York City Rochester, and Buffalo the school health service is under the jurisdiction of the Health Department. Elsewhere in the state it is under the jurisdiction of the Education Department. However, with slight modification all the principles listed by Dr Wheatley are just as applicable in the state as a whole as they would be in New York City

I want particularly to call your attention to the educational trend as shown in Dr Wheatley's paper Certainly the cooperation of the teachers and other school personnel is most essential to a good school health program The teachers are the first line of defense in the school health program because they see the child every day

a study of elementary school children made by the New York State Education Department² Many of the children studied had insufficient sleep Almost 15 per cent showed listlessness, inattention, irritability, and nervous instability during the day—indicative of fatigue Thirty per cent of the children with these symptoms had them either at the end of the morning or the afternoon session of school Of the mothers who were interviewed in this study, 20 per cent reported one hour or less outdoor play at home for their children The investigation of food habits among these children showed that many had an inadequate amount of milk, that 25 to 50 per cent of them were using tea and coffee regularly, and that the diets of many of the children were low in vegetables and fruits This is a rich field for the physician to exercise his educational function The physician actually can set the pace for the health teaching in the classroom when he discovers and emphasizes to the teacher the needs of the individual child It is an opportunity that has been often missed at the time of the medical examination In fact, the classroom teacher needs the guidance of the physician if her health instruction is to meet the needs of the individual child

Another educational opportunity occurs through the questions asked by the parent One parent wants to know if children's baby teeth are important, another will ask about the value of laxatives, another wants to know the effect of diseased tonsils, another, the meaning of the Schick test or the need for immunization Sometimes there are questions about the proper amount of rest for a child or why the child does not weigh as much as he should according to the height and weight table When parents ask advice on treatment, the school physician must recommend that this question be asked of the physician who has responsibility for treating the problem In fact, he can stress the importance of regular medical supervision Families with private physicians can be

advised to take the child to their own physician for a periodic check up Families who use the hospital ambulance service can be enlightened on the indications for calling the ambulance physician The recent study in New York City on the "Choice and Change of Doctors,"³ shows all too clearly the need for public education in intelligent use of medical facilities The following is an illustration of the effective part the health service can play For the past two years, school physicians and nurses of the Health Department have interviewed parents at the time of registration in the elementary schools Parents with family physicians were personally advised to have the entrance examination done by their own physician In each of these years 25 per cent of the new admissions in September to schools in the entire city were examined by their family physicians Four years ago the figure was 14 per cent

Education Should Lead to Action

One of the best measures we have of the value of this more intimate relationship with the school physician is the ready response by the parent when medical attention is recommended The plan for treatment is considered the most important part of the interview When a defect or a health problem has been discovered, the examination is not considered completed unless a plan for treatment appears on the record The child's record must show what is going to be done about the condition We want to know what action is planned by the parent to take care of the problem Action is the true measure of the educational value of the school medical examination In fact, one of the severe criticisms leveled against the school health service has been the fruitlessness of an examination in that it did not lead to action This has been well stated in the report of the New York State Health Commission in 1932 in a discussion of school hygiene⁴ It was said that "hundreds of thousands of dollars are spent annually in the State for the examination and re-examination of children

which discover and re-discover the presence of defects, about which nothing is done by the parents or by the school." To prove that talking with parents is productive, our results in a recent survey show that of children who were examined by the school physician with the parents present during the months of September through January, by the end of the school year five months later, more than half had received the medical attention that had been recommended.

Additional educational opportunities exist for the school physician in the public health program. More frequent conferences by the physician with the principals and teachers would promote a better understanding of health by the teaching staff. Principals carry a great responsibility from day to day, and there should be opportunity for the school physician to discuss health matters with the principal. Teachers will give more attention to the day-to-day health of their pupils if the physician can occasionally confer individually with them. The school physician might do much to quicken the interest of the private physician and the clinic by having the opportunity to explain the purposes and methods of the school health service and other phases of the public health program.

The elementary school physician has been a part of the public health program for most of the life of modern public health. Yet his light has been long hidden under a bushel of defects. It has been thought that his only contribution is defect finding. Most school health programs have not given him a chance to identify accurately health problems among children. Rapid, superficial inspection of children has given us statistics on dubious defects. Most school health workers now believe that this has not been the correct emphasis in the school health program. In fact, some public health workers, on this basis of past performance, are skeptical of the value of school health work. There should be no doubt about its value. If public health means public health educa-

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Therefore, the school physician need no longer be thought of as a medical inspector. He is a medical adviser. He is concerned with learning how the child is functioning in the school. To learn this he makes use of the teacher's knowledge of her pupils and the nurse's information of the children. He advises the school authorities as well as the parent of the significance of his findings. His medical examination can be made a demonstration of a health examination by exploiting all the educational opportunities that it possesses. A friendly reception of the parent, kindness in the examination of the child, an interview by the physician with the parent to elicit history, answer her questions, and to plan for necessary medical attention, exchange of health information with the teacher—all are necessary to make the examination a teaching experience. This is the unique contribution of the school physician in the public health program.

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I want particularly to call your attention to the educational trend as shown in Dr. Wheatley's paper. Certainly the cooperation of the teachers and other school personnel is most essential to a good school health program. The teachers are the first line of defense in the school health program because they see the child every day,

whereas the school nurse and the school doctor's time is scattered over such a wide group that dependence must be placed on the teachers for carrying out the program in detail

In finding the problems in the school I wish to add one more method to those listed by Dr Wheatley—that is, by direct reference of these problems by the school administrator to the school physician. When I was a school physician my office was just across the hall from the superintendent of school's office, and scarcely a day went by that he did not call me into his office for various school health problems

The frequency of the examination was discussed by Dr Wheatley. We differ from his recommendation because of the fact that the state law requires an annual examination of the pupils, and because the leaders in child health, such as the American Academy of Pediatrics, have suggested and recommended an annual examination for every child. The experience of our department has been that the frequency of examination is not in any way correlated with the quality of the examination given. Instead of releasing the school physician for other duties, our experience has been that the school physician is gradually pushed back further and further in the program and less of his time provided when the annual examination is not required. The need we see is not so much for less frequent examinations but for better follow-ups. By and large, the examination of the pupils in the state is twice to three times as good as the follow-up, which is the responsibility of the school administrator. In other words, from two to three times as many defects are found as are followed up by the other members of the school personnel upon whom this responsibility falls. In studying the reports that we obtained from schools and in our field visits, we found that for every school physician who is doing poor work there are two doing good work and three doing excellent work—that is, work beyond the call to duty. However, the one physician who does poor work receives the most publicity, and the school physician who gives extra time for little pay ordinarily receives little recognition for this.

I like Dr Wheatley's description of the school physician as the school medical adviser. There are a number of problems in which he should be consulted. Among them are in-service, teacher training, pupil-teacher relationship, punishment, and the like. For example, I remember one child who vomited every morning prior to going to school until we had changed this child to another teacher's room, following which all the vomiting ceased. Another case the teacher so frightened the children that they re-

fused to eat at noon because they were afraid they would be late for school. The children in this room were constantly going to the physician for medical care, and the parents became quite concerned. The transfer of this teacher to a different type of work stopped all this trouble.

The arrangement of the program should be studied by the physician—that is, the difficult subjects following an easy subject, periods of relaxation, length and conduct of the noon hour, cafeteria management, the accuracy and adequacy of the health teaching material. We feel that the school physician is not a teacher of classroom subjects but that he teaches in individual conference and could assist in furnishing material for teaching and in passing upon the material used in the classroom, the supervision of the physically handicapped, the observation and supervision of teachers' health, janitorial service, and the sanitation of the school plant. As you know now, it is not within the province of the school physician to examine or cause to be examined a member of the school personnel unless he is suspicious of a communicable disease.

I feel that the school physician should be called upon for advice in these matters and give his time to them. I also feel that unless the school physician and the medical profession take an active interest in these extra duties such advice and such supervision will be forthcoming from others.

Dr Don W Gudakunst, *New York City*—It is particularly important to emphasize the fact that the school physician is expected to participate in a general public health program. This statement implies that the services rendered by the school physicians and school nurses should be in line with the community health program—particularly should the school physician have an awareness of the part he plays in the health education movement. There is a very healthy trend in many parts of the country toward reduction of the actual amount of service rendered to school children by school physicians and nurses, with a corresponding increase in the educational program—teaching children, families, and the entire community the need for medical service and when and where and how to obtain it.

Most public health workers have come to realize that direct service to individuals have at the best but a temporary or fleeting influence on a general health problem. The more permanent good is gained by teaching the value of medical care. Such teaching, however, is fruitless if medical services are not available to the school children and to the community as a

whole. There is, therefore, a direct obligation upon the school physician to enlarge the scope of his work to include consideration of the health and medical facilities of the entire community. There can be but little purpose in finding large numbers of physical defects as the result of detailed school health examinations and then have no means at the command of the public for obtaining the indicated corrections. If the school physician is doing anything but a piecemeal, patchwork job, he must use his every influence to carry along the entire community to the point where it will be able to furnish adequate medical service for all of its groups of population, irrespective of their social, economic, or age distribution.

Almost universally in the past, and all too commonly today, the school physician has been too busy conducting physical examinations and carrying on immunization programs to be aware of the broader problems confronting him. Even a casual review of the accomplishments under any school medical service, based exclusively on the idea of services rendered to school children, would show that these particular school systems have been confronted year after year by the same percentages of physical defects and the same array of uncared-for conditions urgently in need of treatment. Quite obviously any plan that will substitute for this, a program that can show a decreasing list of defects year after year, is much more desirable. It has been demonstrated that this is possible and that such benefits do accrue where an ever-increasing amount of attention is paid to the child's health by the family, where both family and community take an increased responsibility for care of children, and where an ever-decreasing amount of direct responsibility for service and medical care is assumed by the school doctor.

Let us set up as our ideal not an examination in every school every year for every child with 100-per cent immunization by the school doctor but rather let us set up as the goal to be reached that situation where every child will come to school well prepared for school and life, where every child will have been under the continuous supervision of competent physicians from before the time of birth. Let the school and the school doctors meet the challenge of teaching child, parent, and community.

Discussion of Symposium on Participation in the Public Health Program

Dr Paul B. Brooks, *Albany, New York*—Dr Thomson struck what is really the keynote when he said, referring more particularly to

health officials and private practitioners of medicine, that "none can function effectively without the others." This applies equally to the school physician and even to "the citizen." We all have fairly well defined and more or less independent parts to play in the protection of public health, but our only hope of any great accomplishment in that line lies in coordination of our efforts. I, personally, have no desire to see health departments control or regulate the practice of medicine except, of course, so far as it is necessary in such matters as the control of communicable disease—the sort of thing to which we have long been accustomed and which I am sure we will all agree to be necessary, within reasonable limits. Nor, on the other hand, do I think that the private practitioners should expect to direct the work of health departments. Each of us, the official and the private practitioner, has his special field in which he is particularly qualified. Naturally there is some overlapping, but I personally think we will get the best results if we work together unitedly and harmoniously but, in the main, stay on our own side of the fence.

I think that sometimes in considering relationships between private practitioners, various kinds of medical officials, and the lay organizations interested in public health we are inclined to give too little thought to the status of "the citizen." When we stop to think of it, the only reason we exist as health officers, school physicians, and private practitioners of medicine is that the public (which we sometimes speak of a little scornfully as "the laity") needs and has demanded the kind of service we can give. We need to remind ourselves now and then that laws setting up health departments and licensing physicians to practice were not enacted to give us as doctors something to do but because the public, represented in the Legislature, wanted the protection and service that such laws would make available to them. It is a good thing for all of us to keep in mind that if the time should ever come when the public was not satisfied with the kind of service it was getting from its health officials, school physicians, and medical practitioners it might take the matter into its own hands and try to provide for its needs in other ways.

My principal point in all this is that, while it is natural for all of us to have a concern about our own interests, we will do well to keep prominently before us the fact that our real job jointly and severally, is to serve the public.

Dr Jerome Meyers, *New York City*—Dr Thomson has particularly stressed the desira-

bility of the participation of the medical profession in Health Department activities, especially in the prevention of disease. I should like to bring to your attention an example of such participation. A series of ten biweekly public health panel meetings was given at the Mott Haven Health Center of the Bureau of District Health Administration of the New York City Department of Health the first five months of this year. These meetings were planned by the Center and the District Health Committee to give to the public authoritative information on outstanding medical and public health conditions, stressing prevention and the latest and best methods of treatment, both by the private physician and the Department of Health, respectively. The Bronx County Medical Society

sponsored the series in its official bulletin, emphasizing the cooperative role, in the home, of the private physician with the Department of Health in the prevention of disease. The society designated twenty of its members as speakers on the ten panels. I believe that this is the first time that a county society in the city of New York has cooperated in this way with the Department of Health. The public response was most gratifying. The auditorium of the Center was generally filled to capacity. The question and answer periods lasted from one to one and one-half hours. The subjects covered were syphilis, appendicitis, pneumonia, diphtheria, the dangers of whooping cough and measles, tuberculosis, trichinosis, diabetes, acute rheumatic fever and heart disease in children, and cancer.

JUNIOR MEDICAL OFFICERS SOUGHT FOR GOVERNMENT SERVICE

The U S Civil Service Commission has announced examinations to fill two classes of junior medical officer positions (rotating internship and psychiatric resident) at St Elizabeth's Hospital, Washington, D C. The salary for the position is \$2,000 a year, less a retirement deduction of 3½ per cent and a deduction of \$80 a year for quarters, laundry, and medical attention.

For the rotating internship position, applicants must be fourth-year students in a Class A medical school, however, they cannot enter on duty until they furnish a certificate showing completion of the medical course prior to June 30, 1941.

For the psychiatric resident position, applicants must have completed their fourth year of study in a Class A medical school subsequent to December 31, 1937, and must have the degree of B M or M D. In addition, they must have completed a one-year rotating internship.

Applicants will be rated on a written examination consisting of questions designed to measure applicant's aptitude for learning and adjusting to professional duties in the service. They will also be rated on education, experience, fitness.

Applications must be filed with the Commission's Washington office not later than October 17, if received from states east of Colorado, and not later than October 21, 1940, if received from Colorado and states westward.

Further information regarding the examinations is contained in the formal announcement. Announcements and application forms may be obtained from the Secretary of the Board of United States Civil Service Examiners at any first- or second-class post office, or from the U S Civil Service Commission, Wash, D C.

MEDICATED CLASSICS

(Based on Edgar Allen Poe's "The Raven")

Once upon a midnight dreary, while I pondered,
weak and weary,
Over ledgers heavy with their red unbalanced
score,
Suddenly there came a tapping, unmistaken,
steady, rapping,
As of someone gently rapping at my office door
"Hm," said I, "a patient wishin' for the aid of a
physician,
And I'll rise and let him enter, though the hour is
close to four."
When I threw wide open the portal, there stood
staring such a mortal
In my wildest fancies I had never seen before.
"Tax collector," he cried grinning, and he added
to this dinning,
With a chuckle, "Me, and nuttin' more."
"Ah!" I groaned as I retreated, knowing well I
was defeated,
"Just another set-back, leaving me depressed and
sore.
Taxes, taxes, never ending, how my back is ever
bending,
Economic handcuffs that restrict me more and
more
"When," I cried in desperation, "will some
thoughtful legislation
Give the harassed doctor back the good old days
of yore?"
But the evil tax collector, like some ill-foreboding
spectre,
Shrugged his shoulders, spitting on the floor
"When will my enslaved profession be relieved of
this oppression?"
But he smiled, and muttered, "Nevermore!"—
James A. Brussel, in J.A.M.A.

SEND IT TO THE LAUNDRY

The young daughter was struggling for descriptive words that would visualize a scar from a burn on a playmate's arm. Finally she beamed "I know. It's like skin that's been washed but not ironed"—H J N, Ohio, in J.A.M.A.

NOT ENOUGH

You cannot stop contagious disease with a law, a health officer, and a placard. You must get cooperation of the people by education, by persuasion, and by organization.—California and Western Medicine

ASEPTIC TOTAL COLECTOMY

D PHILIP MACGUIRE, M D , New York City

THE author published "Aseptic Ileostomy" in the *American Journal of Surgery*, 1935, volume 29, as the methods then in vogue, the single-barreled ileostomy and the John Young Brown methods, were unsatisfactory for obvious reasons. The most important from my standpoint is the fact that the maneuvers necessitated cutting across the barrel of the ileum intraperitoneally, and, especially in the more acute cases, the mortality was extremely high, as the ileum in these cases contained a large amount of pathogenic bacteria and the usual result was death from peritonitis.

The first step in aseptic total colectomy is the aseptic ileostomy (see Figs 1, 2,

and 3)—making the U-shaped flap through the skin and aponeurosis and separating the muscles and incising the peritoneum. The terminal ileum is then supported on the skin and aponeurosis bridge, and the peritoneum is sutured loosely around the proximal and distal ends. The U-shaped flap is passed through the incision in the mesentery of the ileum.

When sufficient time elapses for adhesions to form, the ileum is opened and the proximal end is drained by inserting a tube. The blood chemistry of the patient is constantly checked, and transfusions of blood and administration of fluids are given as indicated.

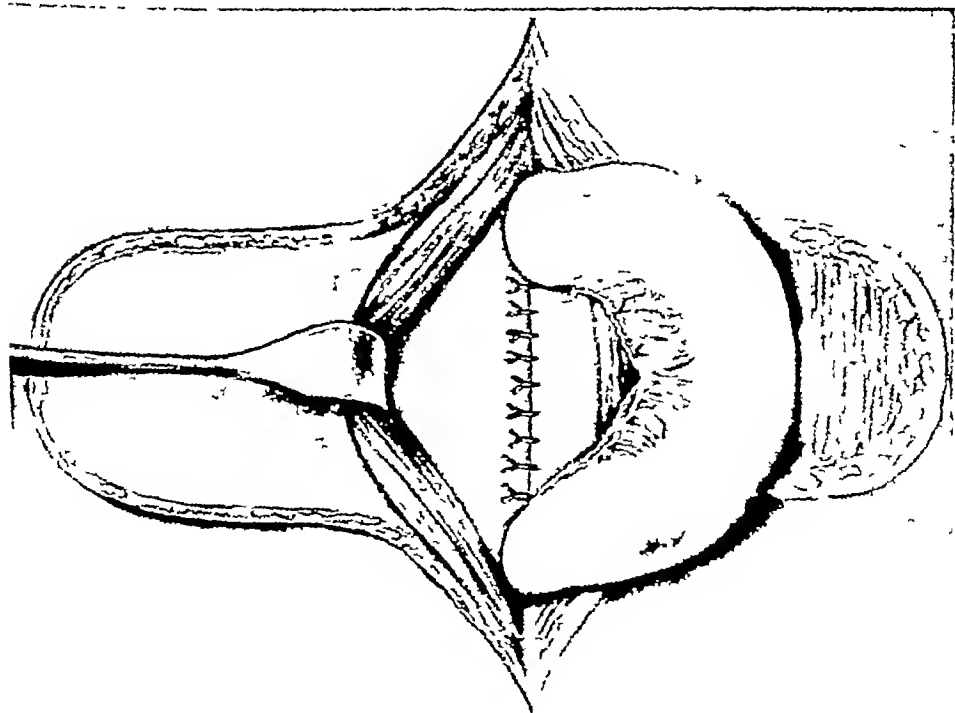


FIG 1

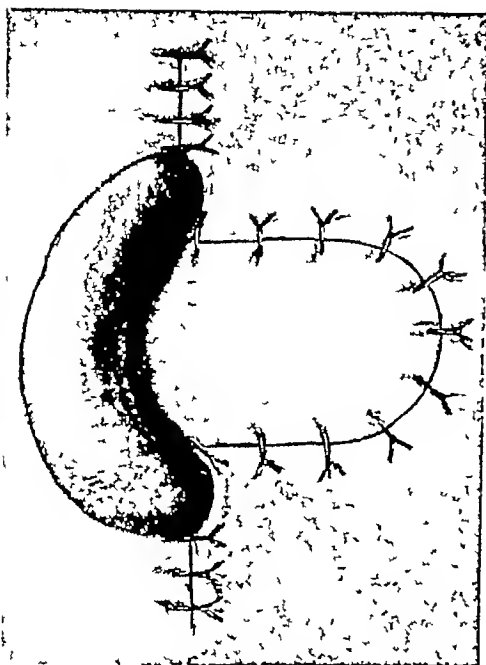


FIG 2

In several weeks when the patient's reports are satisfactory, total aseptic colectomy is performed

The primary step in the second stage is closure of the distal end of the divided ileum by incising the skin around the opening and then sealing off the opening by the usual method of suturing. A median abdominal incision is then made, and the distal terminal ileum and right colon are attacked first, followed by the removal of the omentum and the transverse colon. At any time during these maneuvers, if the patient's condition should warrant it, the resected right and transverse colons could be brought out on the abdomen and the operation terminated quickly without soiling the peritoneal cavity. If the patient's condition is satisfactory, the removal should proceed, freeing the left colon and sigmoid and incising the peritoneum at the base of the pelvis. Hemostasis should be absolute and the upper rectum should be freed from the front and back over the sacrum by gauze dissection as low as possible.

Hot laparotomy pads are placed in the abdomen, and the incision is temporarily closed with towel hooks and gauze pads. The patient is then placed in the li

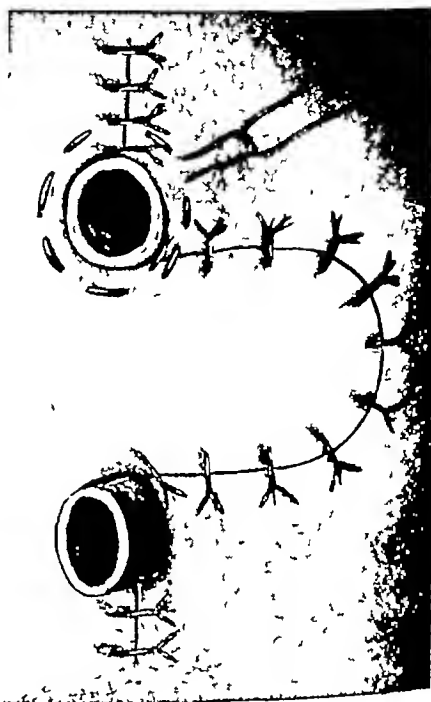


FIG 3

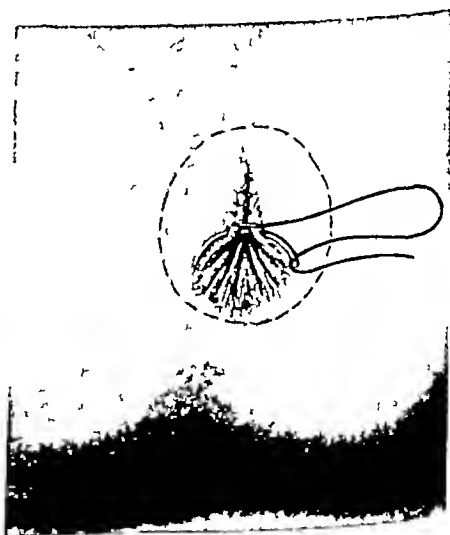


FIG 4



FIG 5

thotomy posture with the legs well drawn up. The perineal area is then prepared, the rectum is closed by suture, a circular incision is made around the anal orifice, and the inner edges are sutured together to prevent any soiling in this area (see Fig 4). The dissection is advanced, and the resected segment is wrapped with iodoform gauze and a rubber glove and held in place by sterile rubber bands.

After this lower segment is completely freed, a temporary gauze dressing is placed over the perineal area, the gloves and gowns are quickly changed, the

abdomen is reopened, and the entire segment is drawn upward and out of the abdomen (see Fig 5).

The raw areas in the abdominal and pelvic peritoneum are closed by sutures with due care, followed by closure of the median incision (see Fig 6).

The perineal area is then packed with gauze, surrounded by the usual rubber diaphragm, and finally covered by gauze pads.

During these entire procedures clamping of the bowel was avoided, also cutting the lumen of the bowel intraperitoneally either by cautery or scalpel, and a total

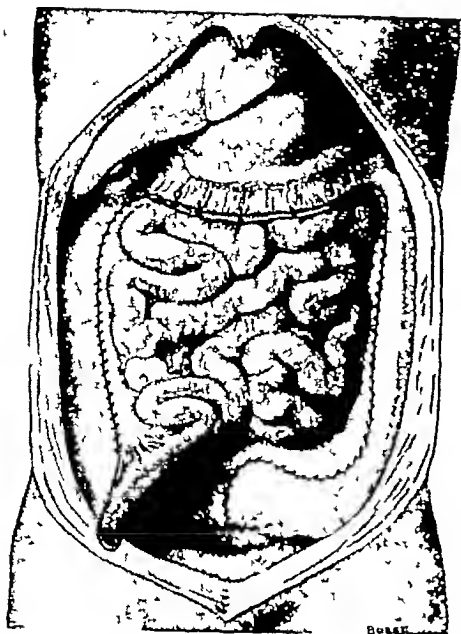


FIG 6

A BLOW IN THE DOLLAR PLEXUS

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It seems scarcely necessary to add that these patients should be operated upon before they reach a critical state due to sepsis.

THREAD FOR STITCHING WOUNDS

Regular cotton thread is a satisfactory material for the suturing or stitching of surgical wounds, William H. Meade, M.D., and Alton Ochsner, M.D., New Orleans, report in the *J.A.M.A.*

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"Because of its availability and the ease with which it can be sterilized, cotton thread would be a very satisfactory suture in field hospitals in wartime."

throughout the country publicize the idea widely, using newspaper advertisements, bill boards, car cards, and the like to call attention to the occasion and to the fact that banks have funds on hand to lend for the excellent purpose of paying doctor bills.

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THE HYPERACTIVE CAROTID SINUS REFLEX SYNDROME*

ARNOLD KOFFLER, M D , and STEWART F ALEXANDER, M D , New York City

(From the Fourth Medical Division, Bellevue Hospital, Dr Charles A Nammack, Director)

THIS report is a presentation of a small series of clinical cases demonstrating the hyperactive carotid sinus reflex syndrome. This syndrome has been clearly elucidated by Weiss and others^{7,9} There are still many factors concerned in its production that have not as yet been shown, and the syndrome is not well recognized by many as a clinical entity

The carotid sinus is one of the afferent branches of the autonomic nervous system and is a nervous plexus situated about the arteries at the bifurcation of the common carotid artery Physiologists have repeatedly demonstrated in animals that stimulation of this nerve area produces profound changes—namely, the carotid sinus nerves in conjunction with the aortic nerves inhibit the cardiovascular system mechanisms³

The carotid sinus and aortic nerves in the human body normally exert a tonic inhibitory influence on the heart rate and the systemic arterial tension¹² In times of stress this tonic inhibitory action is augmented as a protective mechanism to prevent embarrassment of the cardiac myocardium and peripheral arterial network Under certain conditions this reflex is more sensitive and, at times, assumes pathologic significance. The nerve end-organs responsible for this reflex are situated on the intrinsic wall of the artery and in intimate contact with its supporting structures The actual physiology of the end-organ stimulation is not known Yet, any process that produces an irritative stimulation of the arterial wall from without will change the rate of nervous impulse discharge from the nerve plexus The afferent pathway of the carotid sinus reflex in man is primarily through the glossopharyngeal nerve, although other fibers accompany several parasympathetic

nerves to the central nervous system Synaptic connections lead the efferent impulses to the vegetative centers and the parasympathetic nerves The height of ascent of the reflex arc is not known, but it is probably not above the midbrain

In the hyperactive carotid sinus reflex syndrome, the normal reflex action may become pathologic. There are two etiologic types recognizable one, due to excessive stimulation of the nerve end-organs and the other, due to a total autonomic imbalance Clinically, most cases fit into the former group Enlarged lymph glands in the region of the carotid arteries, benign and malignant tumors in the neck, and tumors of the carotid body may irritate these end-organs In the older age group there is usually a marked peripheral arteriosclerosis This pathologic change is in the wall of the artery where the formation of calcareous deposits irritate the nerve endings In these patients a small stimulus will cause carotid sinus syncope Generalized autonomic imbalance is encountered in the younger individuals and is often associated with other evidence of autonomic dysfunction Several authors have separated the syndrome into three types the vagal, the depressor, and the cerebral, depending on the motor pathway taken by the afferent impulses⁹

The hyperactive carotid sinus syndrome consists of attacks of syncope associated with other evidences of autonomic dysfunction due to hyperactive reflex action from the carotid nerve plexus

Several methods of eliciting the reflex action have been described It has been our experience that the following is the most accurate and constant method for stimulation Standing behind the patient, the examiner places his hand on that side of the neck which he is stimulating The middle finger is used to compress the

* The authors wish to acknowledge the kind cooperation of Dr Gertrude H. B. Nicolson in this study

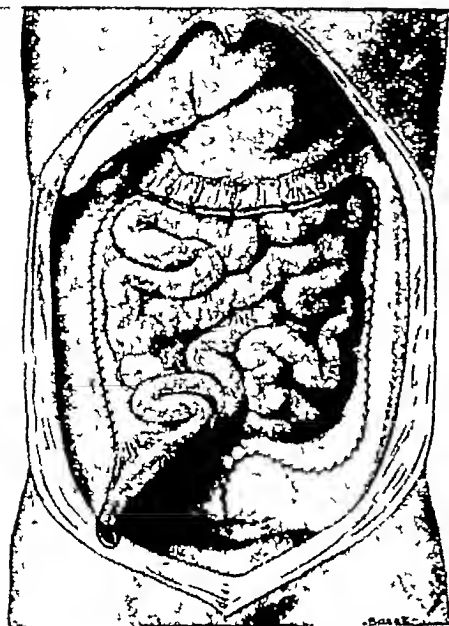


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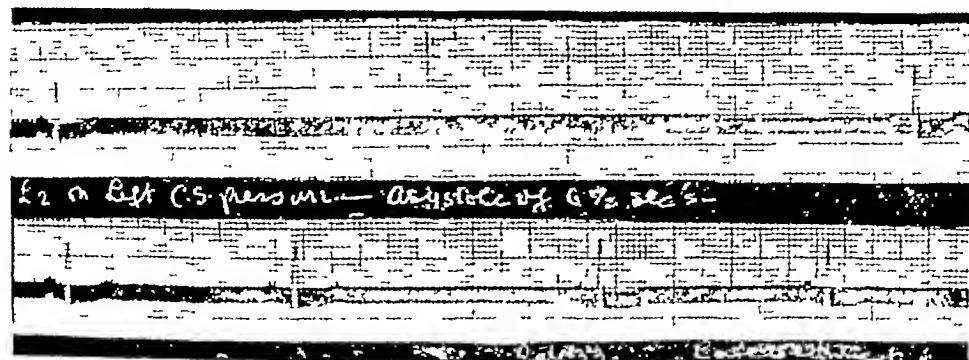


FIG 3 CASE 3 Lead 2 The first graph shows the period of asystole initiated by carotid sinus stimulation. This was followed by marked bradycardia, but the electrical waves are of normal contour

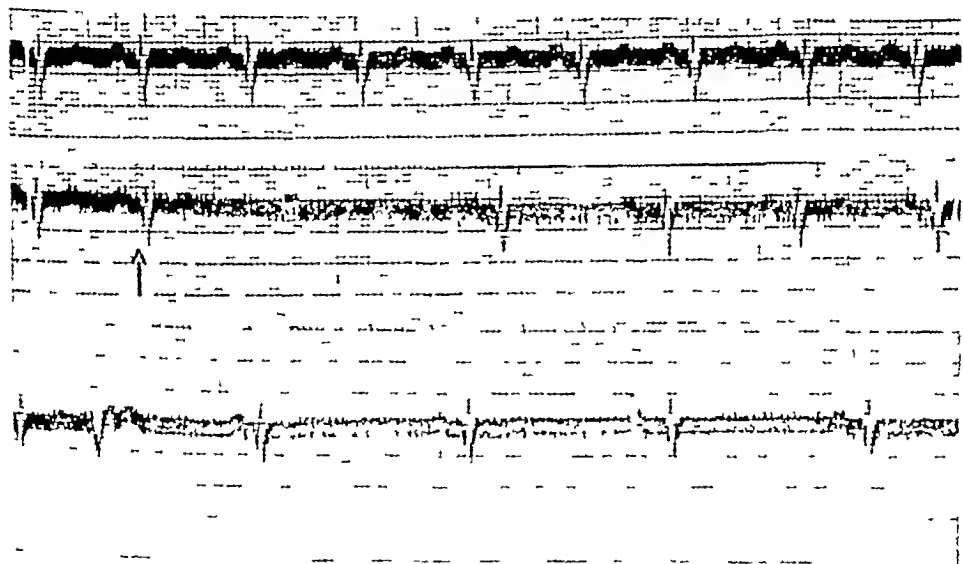


FIG 4 CASE 4 All graphs are lead 3 Top graph is for control Arrow indicates point of stimulation, which is followed by a normal P wave but no ventricular component—indicative of a transient complete A-V block Lower graph demonstrates the sinus bradycardia

right carotid sinus produced no effect. Pressure of the left carotid caused the pulse to fall from a rate of 98 to 50 and the blood pressure to fall from 184/110 to 140/100. He also developed tremors, convulsive in type, in all of his extremities, and he assumed the clinical picture of sudden shock. When the pressure was relieved, he regained his normal state in two minutes.

Case 3—J. K., aged 62, white man, was admitted for a sudden attack of vertigo, diplopia, and vomiting. He had had a similar episode one month before. Physical examination revealed generalized arteriosclerosis with an arterial tension of 190/100. There was a large hydrocele on the left side. Complete neurologic

examination was negative. There was a trace of albumin in the urine. X-ray of the heart showed minimal widening of the aorta. Special x-rays failed to reveal calcification of the aortic ring. The blood counts and the blood chemistry were normal. The spinal fluid was normal. The serologic tests were negative. The electrocardiogram was normal. On stimulation of the right carotid sinus no definite effect was noted. Stimulation of the left carotid sinus resulted in complete asystole of the heart for six and one-half seconds, after which it continued at a rate of thirty-three. After seven seconds stimulation, the patient lost consciousness and had a convulsive seizure. Two minutes after the stimulation

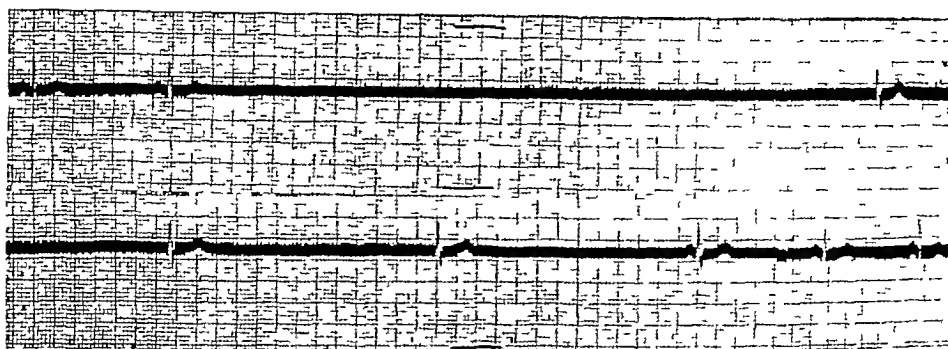


FIG 1 CASE 1 Lead 2 Carotid sinus stimulation produced a period of cardiac asystole for 7.2 seconds. Following three beats of nodal origin at a diminished rate, regular rhythm was established.

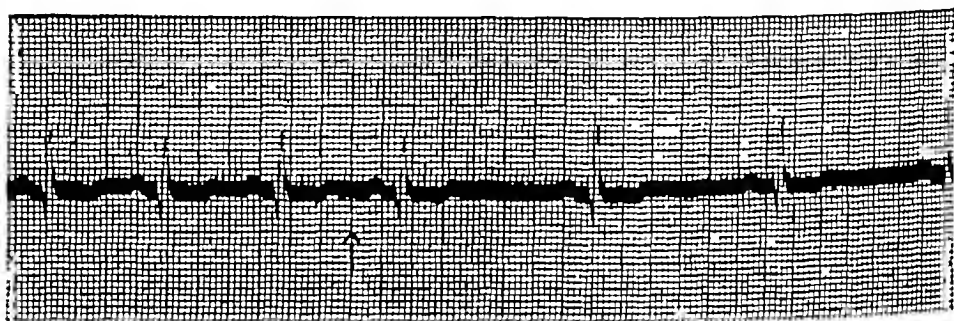


FIG 2 CASE 2 Lead 2 Arrow indicates point of carotid sinus stimulation. Note marked change in cardiac rate with no change in rhythm.

internal carotid artery against the tubercle of the transverse process of the sixth cervical vertebra. In this manner the index finger will confirm the compression of the artery while the ring finger may count and measure the pulse beat. When the syndrome is present, as manifested by slowing of heart rate, fall in blood pressure, and, at times, syncope with or without convulsions, the effects are elicited within five seconds.

Case Reports

Case 1—S. S., aged 50, white man, had fainting spells and episodes of vertigo for three and one-half years. During this period of time, he had total loss of consciousness on six or seven occasions, while he had many minor episodes of severe vertigo and nausea. The patient had noted that sudden movements of his head and neck would precipitate an attack with no prodromal symptoms. He was accustomed to wearing a rather tight collar. A physical examination revealed marked peripheral arteriosclerosis with an arterial tension of 120/80. The heart, lungs, and

abdomen showed no abnormalities. Complete neurologic examination was normal. Electrocardiogram showed left electrical axis deviation.

Stimulation of the right carotid sinus produced a period of cardiac asystole followed by bradycardia. The pulse rate fell from 76 to 44, and blood pressure fell from 120/82 to 60/30. At this time the patient developed a convulsive seizure. Withdrawal of the stimulation was promptly followed by a return to the patient's normal state. Stimulation of the left carotid sinus produced mild subjective feelings of vertigo.

Case 2—P. M., aged 64, white man, two days before admission suddenly felt dizzy while walking and had to stop to support himself for a few minutes, and allow his head to clear. On the morning of admission, on arising, he had a sudden attack of vertigo which was accentuated by the slightest movement of the head. He became nauseated and vomited. Physical examination showed generalized arteriosclerosis with an arterial tension of 170/110. Neurologic examination, including tests of vestibular function, was essentially negative. Complete laboratory data were essentially negative. Stimulation of the

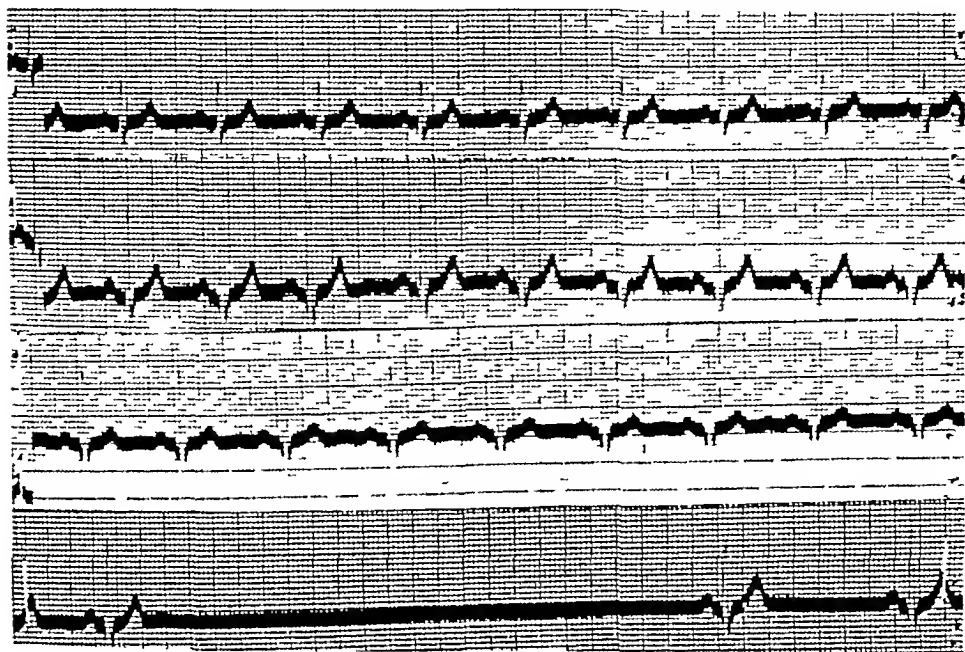


FIG 6 CASE 6 Normal first three leads Carotid sinus stimulation, lead 2, produced cardiac standstill for 4.8 seconds, following which a normal rhythm was re-established with a diminished rate.

produced no marked effect Stimulation of the left carotid sinus produced a period of complete heart block with the absence of any ventricular contraction for four and one-half seconds This was followed by loss of consciousness and generalized convulsions He returned to normal several minutes after release of pressure

Case 6—C B, aged 57, white man, was admitted for left hemiplegia The onset was gradual and was not associated with dizziness or any loss of consciousness The physical examination revealed a complete left hemiplegia There was marked peripheral arteriosclerosis with an arterial tension of 182/100 The blood counts and blood chemistry were normal The serology was negative The spinal fluid revealed no abnormalities The electrocardiogram was essentially normal The patient rapidly improved, and there was a return of 75 to 80 per cent function in his left side When the patient recovered, he gave the additional history of episodes of dizziness and vertigo for several years which were different from this episode on admission Stimulation of the left carotid sinus caused a cardiac asystole for six and one-half seconds which was followed by loss of consciousness and a generalized convulsion The blood pressure fell from 182/100 to 110/60 He quickly returned to normal after the pressure had been released

Case 7—W S, aged 60, white man, was admitted for the care of pulmonary tuberculosis, Class III-B In addition to the pulmonary complaints, the patient gave a history of sudden attacks of vertigo and loss of consciousness during the four years prior to admission The attacks became less frequent during the last year and one-half coincident with the diminution of his activities On physical examination he showed evidences of chronic pulmonary disease and malnutrition There was marked peripheral arteriosclerosis The right lung was dull from the apex to the third rib with harsh breath sounds and also increased fremitus There were medium crackling rales in this area which were accentuated by coughing The left lung was dull from the apex to the second rib, with harsh breath sounds and posttussive fine crackling rales The heart showed regular sinus rhythm and was of normal size There was a loud harsh systolic murmur at the apex and at the base The arterial tension was 130/80 A complete neurologic examination was normal The blood counts and chemistry were normal His sputum was positive for tubercle bacilli The serology was negative The electrocardiogram showed left electrical axis deviation An x-ray of the chest showed a normal cardiac silhouette There was a productive infiltration in the right lung from the apex to the fourth rib with cavitations in the

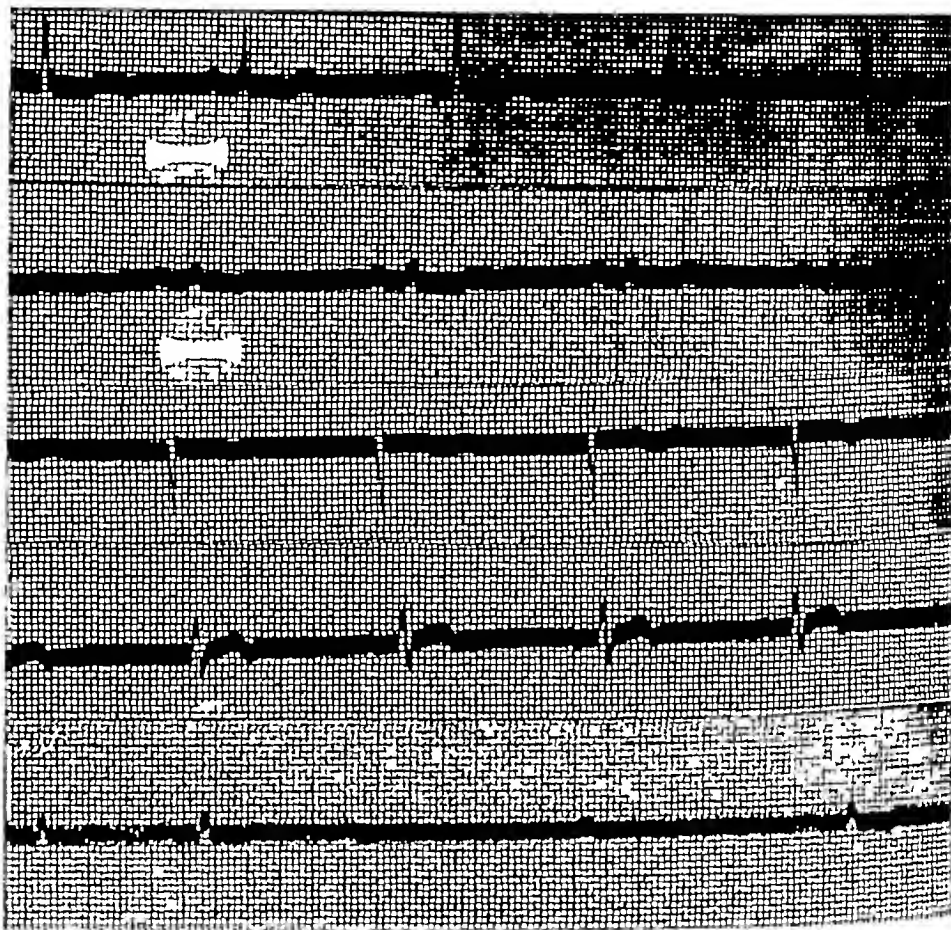


FIG 5 CASE 5 First four leads are typical of extensive myocardial damage with a conduction defect of the partial A-V block character. Lower graph, lead 2, demonstrates conduction aberration by carotid sinus stimulation. Normal but delayed waves come through, but the ventricular component is lost for four seconds. This is a complete but transient A-V block.

was withdrawn, the patient regained his normal state.

Case 4—F. G., aged 69, white man, was admitted for his second attack of dizziness, weakness, nausea, and vomiting. He had also noted numbness over the right side of his body. Physical examination revealed generalized arteriosclerosis and an arterial tension of 130/90. There was a large inguinal hernia. Blood counts and chemistry were normal. The spinal fluid and serology were negative. The x-ray of the heart was normal. The electrocardiogram showed left electrical axis deviation and occasional premature ventricular contractions. Stimulation of the right carotid sinus produced no effect. Stimulation of the left carotid sinus produced a period of complete heart block followed by bradycardia. The patient's blood pressure fell from 130/80 to

85/55, and he had a generalized convulsion with loss of consciousness. The patient returned to his former state when the stimulation was discontinued.

Case 5—R. T., aged 74, white man, was admitted for recurrent attacks of cardiac failure due to arteriosclerotic heart disease. He was a mild diabetic and was under control without insulin. This patient also complained of episodes of dizziness and vertigo on sudden movements of his body, especially of his head and neck. He became nauseated but did not vomit. The physical examination, blood count, and blood chemistry were normal. The neurologic examination was normal. Serology was negative. The electrocardiogram showed evidences of old myocardial disease with low voltage and a partial heart block. Stimulation of the right carotid

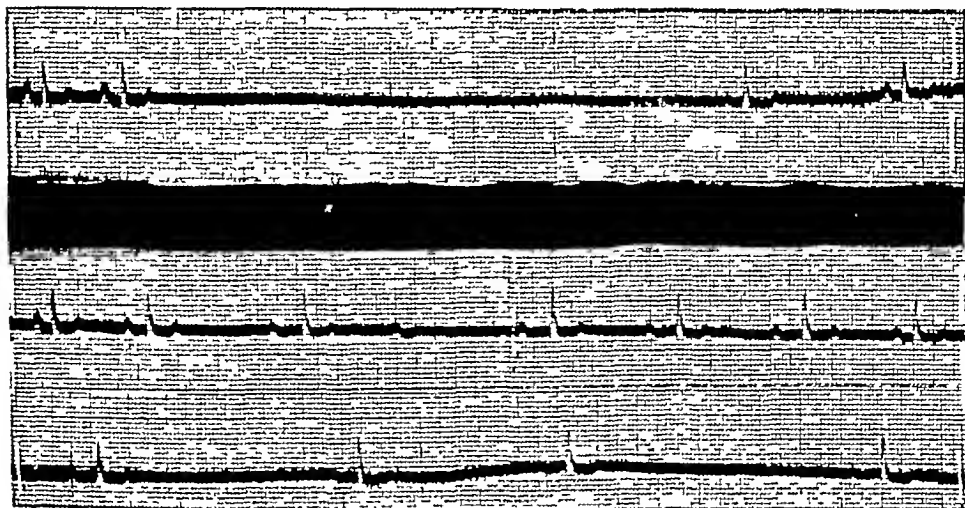


FIG 8 CASE 8 Lead 2 Stimulation of the right carotid sinus initiated cardiac asystole for 6 seconds In the lower graph stimulation of left carotid sinus showed progressive inhibition of cardiac impulse initiation and conduction. P R. interval increased from 0.18 to 0.26 seconds The fourth ventricular component was lost completely

arteriosclerosis, hysteria, Ménière's syndrome, and central nervous system syphilis. For this reason these conditions are the most important ones for differential diagnosis.

It is interesting to note that almost half of the patients experienced nausea and vomiting as one of their chief complaints. Stern⁸ has described 1 case of abdominal pain and intestinal disturbance associated with other evidences of a hyperactive carotid sinus reflex. These manifestations again point to the fact that the reflex action is general and mixed, and it is probable that other visceral phenomena will be noted as the presence of this mechanism is more generally considered.

Our patients failed to respond to atropine therapy. We have found that general therapeutic measures were of great value. Mild sedation with phenobarbital, coupled with modification and limitation of activities, has given satisfactory results in all our cases. Tight neckwear is to be avoided as are sudden movements of the head or body.

Denervation was never necessary in our group of cases, although it is well established as a therapeutic procedure in the younger age group and in cases intractable to a conservative regimen.

Conclusions

The hyperactive carotid sinus reflex syndrome is much more common than is generally recognized. It is an important cause of attacks of vertigo in elderly patients. Its multiple clinical variations are due to a diffuse and varied autonomic motor impulse pathway.

Summary

1 Eight cases of hyperactive carotid sinus reflex syndrome are presented with a discussion of the mechanisms involved.

2 Electrocardiographic evidences of changes in cardiac rhythm are given.

3 The variations in the clinical picture are indicated and forms of therapy noted.

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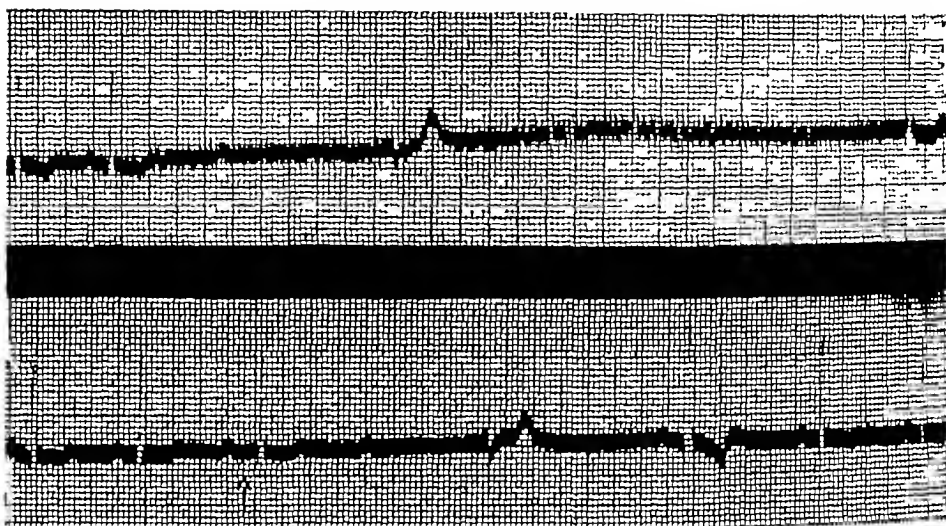


FIG 7 CASE 7 Tracings are lead 2 Stimulation of the right carotid sinus produced cardiac standstill for 6 seconds save for an anomalous ventricular contraction at 2.5 seconds Convulsive tremors (extracardiac) are clearly seen on the graph In the lower film stimulation of the left carotid sinus altered the cardiac rhythm Arrow indicates point of stimulation This was followed by a normal wave but no ventricular complex At regular intervals there followed an abortive ventricular complex and then an abnormal ventricular component following a normal wave

first interspace There were also scattered nodular areas of infiltration in the left lung extending from the second to the fifth interspace Stimulation of the right carotid sinus caused a period of cardiac asystole with a drop in the pulse rate from 86 to 46 At this time the blood pressure fell from 127/80 to 70/50, and the patient began to twitch and then had a convulsive seizure Stimulation of the left carotid sinus produced minor changes in the pulse rate and tension. However, the patient had a subjective feeling of dizziness The patient regained his normal state following withdrawal of the stimulation

Case 8—M W, aged 69, man, had been subject to sudden episodes of syncope for the previous four years These attacks would come on after sudden changes in the position of the head or neck. They were increasing in frequency and interfered with his daily activities The physical examination revealed a marked peripheral arteriosclerosis There was an increased anteroposterior diameter of the chest, and the x-ray showed emphysema The heart sounds were distant, otherwise the findings were normal The abdomen showed a right herniorrhaphy scar A complete neurologic examination was normal The blood pressure was 128/76 The skin over both tibias showed psoriasis The electrocardiogram was essentially normal The blood and urine studies were normal Stimulation of the right carotid sinus produced a period of cardiac asystole and ushered in an episode of vertigo The

blood pressure fell from 130/80 to 90/00, and the pulse dropped from 80 to 24 Stimulation of the left carotid sinus produced less marked clinical effects

Discussion

A significant fact in the cases presented is that all of our patients showed a complex syndrome rather than a single feature syndrome as described by others This seems to be dependent upon the variation in degree of stimulation and reaction of the different autonomic motor pathways. An important consideration is that this is a generalized autonomic reflex action and, therefore, will allow for an understanding of the atypical cases that occur Another significant fact is that all of our patients were in the older age group, the average age being 63.6 years with a variation from 50 to 74 years This would appear to make this reaction one of the more common mechanisms of vertiginous episodes in the elderly male patient

It is important to keep this syndrome in mind in elderly patients admitted with vertigo or convulsive seizures The usual admission diagnoses, in our cases, were epilepsy, ideopathic syncope, cerebral

ture and nausea with vomiting. These were both relatively insignificant.

- 7 Residual nerve deafness, probably related to the disease rather than the therapy, was noted in 2 of the 3 adult patients

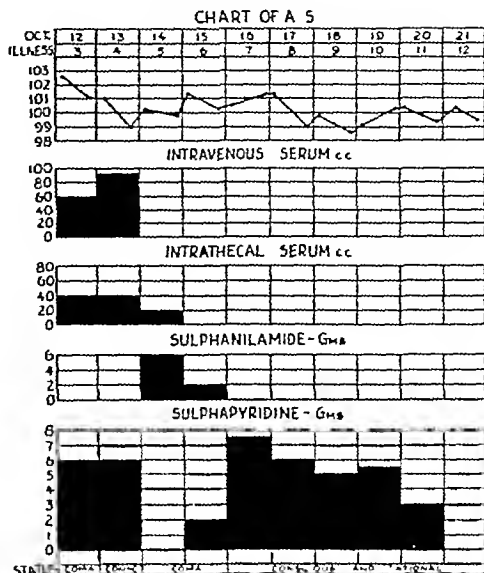
Since the results of these preliminary investigations were quite encouraging, the testing ground was moved to the Sudan where an epidemic of meningitis had broken out among the natives. Bryant and Fairman⁶ reported the results of treatment of 168 patients in the field. Hygienic conditions were most adverse, and their task was beset with innumerable difficulties. To cope with their local problems, they resorted to parenteral administration. A suspension of M & B 693 (sulfapyridine) was the sole therapeutic agent used. Under these circumstances their 95 per cent recovery for all unselected groups treated is truly astonishing.

At approximately the same period, Somers⁷ used this form of therapy during an outbreak of meningitis in the Anglo-Egyptian Sudan. In the treatment of 143 cases, many of whom were not seen until quite late in the disease, the total mortality was reduced to 10 per cent. In a report from India, Ganguli⁸ describes the successful treatment of 4 natives with sulfapyridine alone. Lumbar drainage was refused by 2 of these patients.

For comparative purposes it may be noted that in sulfanilamide-treated cases, both with and without serum, the best series mortality is between 10 and 15 per cent. The usual rate, even with an ideal environment, is higher, especially in patients of the upper age groups.^{9,10,11}

In discussing the chemotherapy of meningitis, Armond-Dehille¹² states that sulfapyridine is quite worthy of additional clinical trial. Bernheim¹³ reports its successful use in an infant suffering from an overwhelming meningococcus meningitis. However, in his case as in the one herein reported, deductions must be made with caution because serum was also used.

Because of the brief but exciting and successful history of this use of sulfa-



pyridine, the following case is presented for further evaluation.

Case Report

A S, aged 66, white female, was in excellent health until October 10, 1939, at which time she complained of heaviness of her head and of "feeling sick." Her temperature was 102 F, and slight redness of the throat was present. The heart sounds seemed distant, and a soft systolic murmur was heard over the precordial area. The chest was clear, no nuchal rigidity was found, and the remainder of the examination was normal. On the following day her condition was improved, and she felt fine.

However, during the morning of October 12, the patient awoke feeling "doopy," but she had no definite complaints. When specifically questioned, she stated that she had no headache. Shortly afterward she lapsed into a semiconscious state. When she was left alone, her respirations were stertorous, but she could be aroused by painful stimuli. Her answers to questions were incoherent. She was immediately referred for admission to Mt. Sinai Hospital.

Examination on arrival at the hospital revealed an acutely ill, comatose patient who could not be aroused. The temperature was found to be 103 F. There were purposeless movements of her hands. Her face appeared flushed and somewhat drawn. Rigidity of the neck was present, and forced flexion seemed to be painful.

The pupils were equal and reacted well to light. Some external deviation of the right eye was noted.

The heart sounds were not changed from the

SULFAPYRIDINE IN MENINGOCOCCUS MENINGITIS

Review of Literature and Report of a Case

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SINCE our present era in medicine leans definitely toward a more widespread use of chemotherapy, the results of new or additional applications of these drugs should be recorded. We are rapidly approaching the time when we shall be able to evaluate critically these reports in establishing more specific indications for this form of treatment. This report of the results of a single case is intended solely as stimulation toward further study of the problem. The cure in a patient over 65 years of age with an overwhelming meningococcus meningitis seems worthy of note.

The use of sulfapyridine in combating the meningococcus, though unreported in the American literature, is not new. Recent clinical trials with great success in limited numbers of cases have been presented in both the English and French literature.

The progress in the study of this drug has been most rapid. A relatively easy method for the estimation of sulfanilamide in body fluids¹ was found to be applicable to sulfapyridine.² It was further determined that the therapeutic action of the drug was an individual property, there was no breakdown to sulfanilamide. Maegraith and Vollum³ studied the bacteriostatic effects of these two chemotherapeutic agents on various organisms. Against the meningococcus, they report (1) both drugs are effective in the presence of corpuscles, and (2) sulfapyridine, termed M & B 693, was more effective even in the absence of blood. In the test tube, it seemed to be superior to sulfanilamide in controlling growth of the meningococcus.

With the report of Wein,⁴ who concluded from animal experimentation that sulfapyridine was not more than one-fourth as toxic as sulfanilamide, the relative safety of a clinical trial in meningo-

coccus meningitis seemed established. In August, 1938, Dimson⁵ treated a patient suffering from chronic meningococcal septicemia with sulfapyridine (M & B 693). The cure was quite striking. In November, 1938, Hobson and MacQuaide² reported 6 carefully controlled cases of meningococcus meningitis in which sulfapyridine (M & B 693) was the only therapeutic agent used. The drug was usually given by mouth, the dose, approximately 1 Gm. every four hours.

Their observations and results are outlined because they seem rather significant even though the series is small.

- 1 There were no deaths.
- 2 Tolerance to relatively large doses was noted. To a child weighing 16½ pounds, 5 Gm. given daily for a period of ten days had no toxic manifestations, though the concentration in the cerebrospinal fluid reached 10 mg.
- 3 Rapid absorption from the gastrointestinal tract into the blood with ready passage into the cerebrospinal fluid was demonstrated. Individual variations in the rate of absorption did exist. Complete achlorhydria was apparently not a factor.
- 4 Concentration of sulfapyridine in the cerebrospinal fluid was greater in the presence of inflammation (reaching 56 per cent) than in health (48 per cent).
- 5 Urinary study revealed the excretion of about 50 per cent of the drug in an unaltered form. Most of the remainder was recovered as the acetyl derivative. It is possible that future study may prove the adequacy of small dosage.
- 6 Of toxic effects, only two were recorded: cyanosis of a transient na-

ture and nausea with vomiting. These were both relatively insignificant.

- 7 Residual nerve deafness, probably related to the disease rather than the therapy, was noted in 2 of the 3 adult patients

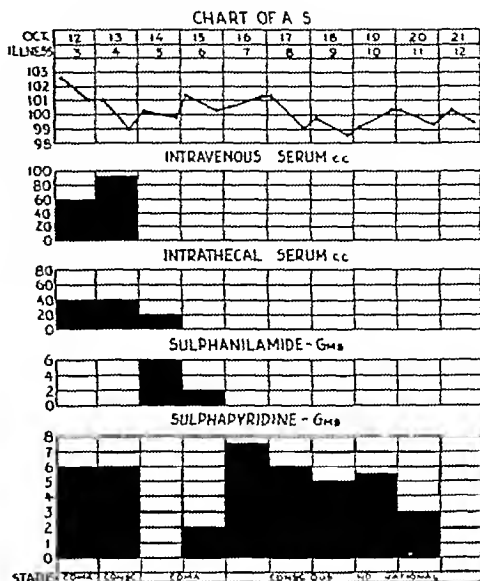
Since the results of these preliminary investigations were quite encouraging, the testing ground was moved to the Sudan where an epidemic of meningitis had broken out among the natives. Bryant and Fairman⁶ reported the results of treatment of 168 patients in the field. Hygienic conditions were most adverse, and their task was beset with innumerable difficulties. To cope with their local problems, they resorted to parenteral administration. A suspension of M & B 693 (sulfapyridine) was the sole therapeutic agent used. Under these circumstances their 95 per cent recovery for all unselected groups treated is truly astonishing.

At approximately the same period, Somers⁷ used this form of therapy during an outbreak of meningitis in the Anglo-Egyptian Sudan. In the treatment of 143 cases, many of whom were not seen until quite late in the disease, the total mortality was reduced to 10 per cent. In a report from India, Ganguli⁸ describes the successful treatment of 4 natives with sulfapyridine alone. Lumbar drainage was refused by 2 of these patients.

For comparative purposes it may be noted that in sulfanilamide-treated cases, both with and without serum, the best series mortality is between 10 and 15 per cent. The usual rate, even with an ideal environment, is higher, especially in patients of the upper age groups^{9,10,11}

In discussing the chemotherapy of meningitis, Armond-Delille¹² states that sulfapyridine is quite worthy of additional clinical trial. Bernheim¹³ reports its successful use in an infant suffering from an overwhelming meningococcus meningitis. However, in his case as in the one herein reported, deductions must be made with caution because serum was also used.

Because of the brief but exciting and successful history of this use of sulfa-



pyridine, the following case is presented for further evaluation.

Case Report

A S, aged 66, white female, was in excellent health until October 10, 1939, at which time she complained of heaviness of her head and of "feeling sick." Her temperature was 102 F, and slight redness of the throat was present. The heart sounds seemed distant, and a soft systolic murmur was heard over the precordial area. The chest was clear, no nuchal rigidity was found, and the remainder of the examination was normal. On the following day her condition was improved, and she felt fine.

However, during the morning of October 12, the patient awoke feeling "dopey," but she had no definite complaints. When specifically questioned, she stated that she had no headache. Shortly afterward she lapsed into a semiconscious state. When she was left alone, her respirations were stertorous, but she could be aroused by painful stimuli. Her answers to questions were incoherent. She was immediately referred for admission to Mt. Sinai Hospital.

Examination on arrival at the hospital revealed an acutely ill, comatose patient who could not be aroused. The temperature was found to be 103 F. There were purposeless movements of her hands. Her face appeared flushed and somewhat drawn. Rigidity of the neck was present, and forced flexion seemed to be painful.

The pupils were equal and reacted well to light. Some external deviation of the right eye was noted.

The heart sounds were not changed from the

previous examination. Both Kernig and Brudzinski were negative

The spinal tap revealed cloudy fluid under markedly increased pressure. There was no evidence of block. In the examination of the fluid, 9,750 leukocytes per cubic millimeter were found of which 90 per cent were polymorphonuclear cells and 10 per cent lymphocytes. No organisms were seen on direct smear. Spinal fluid sugar was found to be 40 mg per hundred cubic centimeters. Twenty-four-hour culture revealed a pure growth of the meningococcus.

The blood count was 15,800 cells per cubic millimeter, with 93 per cent polymorphonuclears and a marked shift to the left.

Because of (a) severe toxic manifestations of the disease, (b) age of the patient, (c) preponderance of cerebral manifestations, and (d) probable poor prognosis, it was decided to treat the patient with all the means at our disposal. Therefore, the following routine was instituted:

1. Slow intravenous infusion of 5 per cent glucose in distilled water to which 20 cc of antimeningococcus serum were added every four hours.
2. Spinal taps every eight hours for purpose of drainage and introduction of antimeningococcus serum intrathecally.
3. Sulfapyridine in suspension to be injected through a Levine tube into the stomach.
4. Supportive symptomatic therapy as indicated.

Within twenty-four hours the patient appeared much improved. By the evening of the second day of her illness she was conscious and rational, with normal temperature. She complained of severe nausea, and in view of the improved prognosis it was deemed advisable to stop the sulfapyridine. Sulfanilamide was given because it was felt that the infection was not completely controlled.

On the morning of the third day the patient appeared rather drowsy, and the temperature began to rise again. Spinal tap at this time revealed fluid under pressure of 300 mm, which was reduced by withdrawal of spinal fluid to 110 mm. The fluid contained 1,300 cells per cubic millimeter with 80 per cent polymorphonuclears. Despite this reduction in spinal fluid pressure, the patient continued her downhill course. By afternoon she was again comatose with a temperature of 101.6 F. Examination of the chest revealed evidence of early consolidation of the upper lobe of the left lung. The interpretation of the clinical picture at this time was considered to be a predominance of the encephalitic phase of the disease complicated by the developing pneumonia.

By the morning of the fourth day the patient was in deep coma from which she could not be aroused. The temperature was 101 F. She was dyspneic and somewhat cyanotic. Since the infection appeared to be predominant, it was decided to again use sulfapyridine, despite the obviously grave condition. She was placed in an oxygen tent, and the drug was given in suspension through a Levine tube.

On the fifth day the patient was stuporous but could be aroused sufficiently to answer questions intelligibly. Her spinal fluid was under normal pressure—the count, 210 cells. The change in her status was indeed encouraging. She continued to improve rapidly. For her complaints of nausea, which appeared shortly after she became conscious and rational, she was given tincture of belladonna in rhubarb and soda with moderate success.

By the tenth day she appeared quite well. Her temperature was normal, her spinal fluid crystal clear, and her chest signs resolving. Blood and spinal fluid cultures were reported negative. Sulfapyridine was, therefore, stopped.

The course, thenceforth, was marred only by a short bout of serum sickness. She was discharged on the thirty-fourth day with the single complaint of slight diminution in hearing on the right side—residual nerve deafness. This has persisted but causes the patient little inconvenience. (See chart on page 1527.)

Summary

A case of overwhelming meningococcus meningitis in a 66-year-old patient is presented because it is suggestive that sulfapyridine was the most important factor in its successful outcome. The dramatic response to the drug and the definite retardation when sulfanilamide was substituted form the basis for this clinical impression. Although sulfapyridine has been used in epidemic meningitis with outstanding results abroad, it has not been reported in the United States. From the limited experience with this case, we feel that its report may lead to the additional trial which it seems to merit.

I should like to express my gratitude to Dr. Josephine B. Neal for her suggestion regarding publication and to Dr. Norman Q. Brill and Ruth Kantor for their help and cooperation.

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PROTECTION OF THE SOLDIER IN WARFARE

At the Section of Surgery of the Royal Society of Medicine, a discussion took place on what the chairman, Mr Zachary Cope, called "the physical prophylaxis of wounds," reports the London correspondent of the *J.A.M.A.* Mr Kenneth Walker said that in the last war he noted how many men were killed by small missiles entering the chest and ripping up one of the great vessels or the heart. The principle that it was worth while protecting the head by means of a steel helmet had been recognized. The old objection to armor—that it would overload the soldier—no longer held. The man to be protected did not march but was carried by lorry, motorcycle, or airplane. Moreover, steel of great tensile power was now available, as well as other suitable materials. Armor to protect against armor-piercing bullets necessitated a weight of twenty pounds out 60 per cent of the wounded arriving at casualty clearing stations were injured by other missiles mostly by trench-mortar splinters. Mr Walker showed specimens of compressed fiber, including bakelite, which had the same tensile power as aluminum but half its weight. It would protect against shrapnel. During the Hitler régime three unsuccessful attempts had been made to induce a certain American inventor of armor to equip the German armies.

Sir Richard Cruise (ophthalmologist) described his duralumin visor. He hoped that no steel helmets would be issued in future without this attachment. From figures which he worked out in 1917 he found that from 50 to 70 per cent of war blindness was preventable.

Sir Harold Gillies (plastic surgeon) said that the War Office should consider the question of extra wind screens which would protect the driver. Frequent in war were burns of the hand caused by placing it in front of the face when exposed to flame. The result was extensive burns if the back of the hand, producing stiff joints. A gauntlet would give protection from this without interfering with the use of the hand in driving. Mr Ogier Ward referred to many casualties from missiles directed from above. The natural reaction was to crouch and therefore there had

been many wounds of the buttock and back. The British helmet, which he thought inferior to the German, afforded no protection to the temple and no protection behind. He suggested a curtain of chain mail attached to the back of the helmet and coming down to the seventh cervical vertebra.

Mr E D D Davis (laryngologist) said that the British helmet was as good as the German, which was fourteen ounces heavier. In the last war Harvey Cushing published a number of photographs showing extensive injury to the helmet, yet the wearer sustained only scalp wounds. The German helmet was more easily seen and its contour was such that it was less efficient in warding off missiles.

Some speakers objected that the weight carried by the soldier must not be increased. Mr T B Layton was absolutely opposed to the addition of any weight to the British soldier's equipment, but he had been impressed by the protection afforded by something in the pocket covering a vital area and weighing about two ounces. Mr Kenneth Walker in reply quoted a war correspondent to the effect that the Germans were using body armor. It would be possible to produce something weighing two ounces to cover the heart and give more protection than a book or flask carried in the breast pocket.

The following resolutions were unanimously adopted: That this representative meeting of the Royal Society of Medicine, after full discussion of the question, is emphatically of the opinion that the physical protection of the members of the fighting forces can and should be improved by a closer collaboration between the medical profession and the appropriate technical experts of the Admiralty, War Office and Air Ministry.

That this meeting of the Royal Society of Medicine resolves that the Council be asked to consider the formation of a special committee to this end. As the matter is one of extreme urgency and importance, it is hoped that the president may use his emergency powers and approach the government with the offer of the society's cooperation at the earliest possible date.

Blood sugar studies made on thirty male golfers ranging from 30 to 45 years of age and possessing handicaps of from 10 to 27 revealed that more ketogenic types of lunch (high in fat) and consumption of sugar or candy at the seventh or ninth hole resulted in definite decreases in untoward symptoms and, on the whole, better scores," Paul Michael, M.D. Oakland, California reports in the *J.A.M.A.* for July 27

There is this difference between the two temporal blessings—health and money. Money is the most envied, but the least enjoyed. Health is the most enjoyed but the least envied, and this superiority of the latter is still more obvious when we reflect that the poorest man would not part with health for money but that the richest would gladly part with all his money for health—*Collins*

OBSTETRICAL PROGNOSIS AND TREATMENT ON BASIS OF PELVIC ARCHITECTURE

ARTHUR WEINBERG, M D , Far Rockaway, New York

WITHIN the last five years more emphasis has been placed on pelvic architecture than on pelvic mensuration. The chief impetus for this has been the new classification of pelvises, suggested by Caldwell and Moloy¹ and based upon architectural features, rather than on measurements of, or the effects of metabolic or deficiency diseases on the pelvic bones themselves. Another reason has been the realization that clinical mensuration by ordinary methods of external and internal pelvimetry is relatively inaccurate and, even when accurate, fails to tell the whole story of the type of labor to be expected.

During the past decade various refinements in the technical methods of pelviroadiography have enabled the roentgenologist or obstetrician to estimate the quantitative capacity of a given pelvis quite accurately. The chief methods in use have been the Thoms's perforated grid method,² the geometric method,³ the Walton chart,⁴ and the Hodges chart obtained by "plotting measured displacement between center of shadow and optical axis in both films."⁵ The most recent method and the one we have used at the Beth Israel Hospital has been effected by the measurement of a phantom image by means of a precision stereoscope.⁶

More recently, the technic of cephalometry has been developed by Thoms² and Hodges.⁵ From Hodges's graphs, if the diameter or the circumference of the fetal skull is known, the average fetal weight and age in utero can be estimated.

It remained, however, for Ball⁷ and Caldwell and his co-workers⁸ to combine the technic of roentgen pelvimetry and cephalometry into the science of roentgen pelvichephalometry. In the Ball method,

correction for film measurements of the fetal skull and maternal pelvis are made by a nomogram, and the circumference of the skull and diameters of the pelvis are converted into volumetric equivalents from which the fetal-pelvic ratio is deduced. In the Caldwell and Moloy method the fetal-pelvic ratio is arbitrarily determined by stereoscopic vision, after which measurements are made of a phantom image in the precision stereoscope as suggested by Dr I. Seth Hirsch in 1922, in a discussion of pelvimetry.

With all these refinements in roentgen mensuration one might inquire why the pelvic architecture, which can best be determined by roentgenologic examination but also to some extent from the clinical characteristics of the pelvis, should be so important to the obstetrician. The reason is twofold. (1) With equal measurements for both the pelvis and the fetal skull, one type of pelvis may offer a good prognosis for spontaneous delivery and another a poor prognosis depending in each case upon the architectural qualities of that pelvis. (2) If an obstetrical maneuver becomes necessary, the knowledge of the architectural characteristics of a pelvis facilitates that maneuver immeasurably.

Most of the original articles on the subject to be discussed described the technical details adequately but made little effort to explain the obstetric significance. Although a few recent articles hinted at or described the obstetric significance in broad general terms, there is a lack of detail concerning the obstetric import of pelvic architecture. While the opinions to be given regarding the prognoses and treatment are by no means all original and it is readily admitted that

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many of the rules of management outlined below are to be found in other recent papers on this subject,^{1,16} nevertheless the suggestions represent the results of my experience as resident in obstetrics at Sinai Hospital, Baltimore, and as resident in radiology at the Beth Israel Hospital in New York. While occupying these two positions I had the opportunity to study both sides of the problem.

Under the new classifications all pelvises that are free of disease are divided into four parent types on the basis of their architecture: gynecoid, android, anthropoid, and platypelloid.

The nomenclature in the new classification is a bit unusual and perhaps should be briefly explained. Each pelvis, besides having a parent type from which it gets its family name, is said to have a tendency and an outlet, which elements usually correspond to the parent type but may differ from that expected with the parent type. When the former conditions obtain, the pelvis is classed as a pure form, when the latter conditions exist, it is classed as a mixed form.

The parent type is determined by the characteristics of the posterior segment of the pelvic inlet, which is that portion of the inlet behind the greatest transverse diameter of the superior strait.

The tendency of any pelvis depends on its anterior segment or that portion of the inlet anterior to the greatest transverse diameter. The anterior segment is often called the fore pelvis.

The outlet is dependent on the subpubic angle and side walls. The full name of any mixed pelvis would include the parent type, tendency, and outlet. In naming a pure pelvis the single name of its parent type is sufficient.

Any particular pelvis can be large, average, or small in size.

In the interest of simplicity the characteristics and prognosis of only the pure types will be discussed. The characteristics and prognosis of mixed types can be inferred from the component elements participating.

The prognosis is on the basis of fetal-pelvic ratio and architecture only and

not on the basis of uterine force, soft part dystocia, and other factors.

1. The Gynecoid Pelvis

Description—The gynecoid or female is the normal, simple round pelvis of previous classifications. It is the most frequent type of pelvis occurring in 50 per cent of all females. The pelvic inlet is round with the transverse diameter intersecting the conjugata vera near its midpoint. The characteristics of the superior strait are a long posterior iliac portion (portion of linea terminalis, behind the greatest transverse diameter), a wide anterior segment, and usually normal measurements for the anteroposterior and transverse diameter.

The sacrospinous notch is wide. The sacrum is average in width, length, and curvature and is inclined backward. The ischial spines are not prominent. The sacrospinous ligament is long (three fingers). The pelvic outlet is characterized by a wide subpubic angle with a marked Norman curve. The rami are short and take their origin from the lateral border of the symphysis pubis. The pelvis is usually shallow, measuring 9 cm. between the iliopectineal line and the ischial tuberosity. This measurement is known as the P.T. diameter.⁹ The side walls and lateral bore are straight, and the bones are thin in texture.

The physical form coinciding with this pelvic type is the graceful variety of female: one with narrow shoulders and waist, broad hips, and slender curved lower legs, the knees of which are not approximated.

The average measurements in gynecoid pelvises were as follows: conjugata vera, 10.8 cm.; transverse diameter, 13.7, and interspinous diameter, 10.5 cm.^{1,15}

Prognosis and Treatment—The gynecoid pelvis offers the best obstetrical prognosis of any type. Engagement occurs in occiput transverse position in approximately 70 per cent, in occiput anterior in 20 per cent, and occiput posterior in 10 per cent of the cases presenting gynecoid pelvises. Included in the primary transverse variety are those in

which the occiput is found slightly anterior or posterior to the precise transverse diameter of the inlet, and these positions are designated as anterior and posterior tendencies of the occiput transverse position. The prognosis is usually excellent if no cephalopelvic disproportion exists. Regardless of the primary engagement of the vertex, rotation is usually anterior and occurs during descent and flexion of the vertex. In an occasional case, especially if engagement occurs in a primary posterior position, posterior rotation may occur, resulting in a persistent direct or oblique posterior position at the outlet. In a gynecoid pelvis, manual or instrumental rotation is quite simple provided that no disproportion exists and that the outlet is also gynecoid in form.

If there is an absolute disproportion at the inlet as indicated by a conjugata vera of less than 7.5 cm. with a full-term live child or if relative disproportion can be demonstrated with a conjugata vera of 9 cm. or less, an abdominal section will be necessary even in a pure gynecoid pelvis. In a borderline case of cephalopelvic disproportion on the basis of accurate roentgen pelvicephalometry, one would be more inclined to give the patient with a gynecoid pelvis a test of labor than a patient with any other type of pelvis. Usually with an average-sized baby a borderline pelvis is one in which the conjugata vera is between 9 and 10 cm. and the conjugata vera and transverse total between 20 and 22 cm.

This decision to give a borderline case a test of labor would be particularly favorable if the unengaged vertex floats over the posterior segment of the pelvis, because in such cases one may infer that the maternal soft parts, consisting of the lower uterine segment and surrounding soft tissues, are directing the vertex toward the axis of the pelvic canal. If, on the other hand, the unengaged vertex floats over the anterior segment of the superior strait, prognosis for spontaneous engagement and delivery is poorer.^{10,11}

In borderline cases in which the vertex is superficially engaged, a posterior parietal presentation with the sagittal suture directed toward the symphysis and the posterior parietal bone most dependent and resting on the promontory would be more favorable than the anterior parietal presentation of Naegele, the so-called Naegele's obliquity which is responsible for the theory of synclitism. It is now believed, as a result of roentgen studies during labor, that Varmer's theory of reverse synclitism is the usual and normal method of engagement, because from this position descent is simplified by posterolateral flexion of the fetal head.¹²

Forceps operations are usually not necessary in the gynecoid type of pelvis, but, if indicated, the forceps are relatively simple to apply and maneuver. Rotation can be effected at any level of arrest because the pelvis is ample throughout. The Simpson type and Tarnier axis-traction forceps suffice for practically all cases of gynecoid pelvis that need forceps.

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2 The Android Pelvis

Description—The android pelvis is the male or funnel pelvis of the older classifications. The parent type occurs in 19 per cent of obstetrical patients and is twice as common in the white race as in the colored. The pelvic inlet is roughly triangular in shape, with the greatest transverse diameter relatively near the sacral promontory. The characteristics of the superior strait are a short, sharply curved posterior iliac portion and a narrow anterior segment, with an acute angle formed at the junction of the anterior iliac portions. The dimensions of the inlet are usually smaller than average but may be larger.

The sacrospinous notch is deep and narrow. The sacrum is short and wide and ends in a blunt tip. It is usually straight and inclined forward. The ischial spines are sharp and prominent, and the sacrospinous ligament is short (two fingers). The pelvic outlet is characterized by a narrow subpubic angle with long straight rami that have their origin from the lower border of the symphysis pubis. The pelvis is deep, usually meas-

uning 10 cm in the pubotuberous diameter. The side walls and lateral bore are convergent. The bones are very often thick in texture.

The physical form coinciding with this pelvic type is the short thickset variety of female with a square torso and thick straight thighs and legs.

The average measurements in a large series of android pelves were conjugata vera, 10.5 cm., transverse diameter, 13.5 cm., and interspinous diameter, 9 cm. Except for the interspinous diameter these dimensions are almost exactly identical with those of the average gynecoid pelvis.

Prognosis and Treatment—The android pelvis, size for size, as a rule offers the worst obstetric prognosis. In the series reported by Steele, Wing, and McLane,¹⁸ the android type of pelvis constituted only 18.5 per cent of the total material but was found to be associated with 80 per cent of the cesarean sections, and 33 1/3 per cent of the remaining operative cases. There is a definite increase in fetal and maternal morbidity and mortality with this type of pelvis. There are many reasons for the danger to patients with android pelvis.

Many of these pelvises are below average size. In Steele's series, 38 per cent of all small pelvises were made up of the android group. Another difficulty is that the android pelvis is difficult to recognize clinically unless it appears in its pure form, and, contrarily, usually it is found as an element in mixed forms. The mixed forms of android pelvises are usually erroneously diagnosed clinically as some other type of pelvis. It is only in the occasional case where an android pelvis is associated with a narrow outlet that it is correctly diagnosed without the use of roentgen aid. The fact that the android pelvis often travels incognito accounts for much of the trouble it causes because dystocia usually is not anticipated. Another reason for the trouble-making capacity of android pelvises lies in its frequent association with the dystocia dystrophy syndrome and with toxemia of pregnancy.¹⁴

However, it is the mechanical aspect that probably plays the greatest role in making trouble for those women endowed with this pelvis type, which by its architecture is unsuited to serve as a satisfactory passageway for parturition. Engagement occurs in the occiput posterior position in approximately 20 per cent of the cases or twice as frequently as it does in gynecoid pelvises. Occiput transverse occurs in 70 per cent of the cases and occiput anterior in the remaining 10 per cent. The reason for this increased incidence of occiput posterior engagements is the fact that the capacity of the posterior pelvis is reduced.

In the management of a patient with an android pelvis all factors must be considered. If a small pelvis is present or disproportion is evident either clinically or by pelvicephalometry, the prognosis is very poor and elective cesarean section is indicated. If the vertex fails to engage at term or after a short test of labor, an abdominal delivery is also indicated, especially if the vertex is floating over the anterior portion of the pelvic brim. In a primipara the indication for an abdominal delivery in this type of case is more definite, in a multipara the previous obstetrical history is probably the best guide.

When the vertex engages in an occiput transverse or occiput anterior, the prognosis is quite favorable. On the other hand, if it engages in an occiput posterior position, the prognosis then depends on the characteristics of the side walls and outlet. If the side walls are straight and the outlet wide, spontaneous rotation usually occurs as the vertex descends. However, if the side walls converge and a narrow outlet is present, mid- or low-pelvic arrest in occiput posterior or occiput transverse position occurs, a state which in this type of pelvis is an unfortunate occurrence, often causing disaster. This arrest is more likely to occur if the posterior sagittal diameter is less than one-half of the interspinous diameter, indicating a small capacity of the posterior pelvis at the plane of least dimensions.

This deep transverse arrest in an android pelvis is one blind alley in obstetrics that should be avoided by cesarean section whenever anticipated. Once this state of affairs has actually occurred it is usually unsafe to attempt an abdominal delivery, and the completion of labor by an operative delivery from below is the choice between two evils. All operative procedures from below in android pelvises are difficult and hazardous, and the prophylactic use of cesarean section will avoid them.

Forceps are frequently indicated in android pelvises and are usually difficult to apply and maneuver. Traction should be the first maneuver following the application, and rotation should be attempted only when the presenting part has reached a low level or is at the outlet. Attempts to rotate at a high level fail and usually damage the child because the vertex has no room to rotate because it soon strikes the posterior wall of the pelvis.

In cases of mid-pelvic arrest in android pelvises, the obstetric maneuver indicated will depend on the outlet characteristics of the pelvis and the variety of arrest.

Transverse arrest is the most common variety. In android pelvises with straight side walls a transverse arrest in mid-pelvis is best handled by a cephalic application of Barton forceps to the transverse position. When correctly applied, the maneuver should consist of anterior lateral flexion, traction with descent to the pelvic floor in the same position, and low anterior rotation on the inner aspects of the pubic ramus. After the anterior rotation, the Barton forceps are removed and the delivery is terminated by cephalic application of pelvic-curved forceps (Simpsons¹⁹). In cases of typical android pelvises with converging side walls and prominent spines a cephalic application of Kielland forceps is preferable.^{16,17} Anterior lateral flexion of the vertex is followed by spiral anterior rotation with simultaneous descent in order to avoid the spines and utilize the larger intertuberous diameter.

In instances of mid-pelvic arrest in occiput posterior in android pelvises, man-

ual rotation to occiput transverse should be executed, following which the technic of delivery is as above.

In cases of mid-pelvic arrest in occiput anterior, manual or instrumental rotation to the direct occiput anterior position followed by traction is sufficient. For this type of delivery the axis traction forceps or an oblique application of ordinary Simpson forceps are satisfactory.

Breech extraction is dangerous, and a breech presentation in this type of pelvis should call for a cesarean section unless the fetus is definitely smaller than average and the pelvis larger. Internal podalic version is hazardous and should not be attempted in android pelvises unless absolutely urgent because of some accident of labor.

3 Anthropoid Pelves

Description—The anthropoid pelvises have a resemblance to the pelvises of anthropoid apes and correspond to the transversely contracted pelvises of earlier classifications described by Robert. The parent type occurs in 27 per cent of all pelvises, but the incidence is much more frequent in the colored race than in the white, making up 41 per cent of the former and only 23 per cent of the latter. The pelvic inlet is elliptical with the long diameter anteroposterior and the short transverse diameter far from the sacral promontory. The characteristics of the superior strait are a long posterior iliac portion and a long anteroposterior diameter that approaches or is greater than the transverse diameter. The anterior segment is adequate. The pelvic inlet is usually larger than average and most of the justo major pelvises are anthropoid types.

The sacrospinous notch is wide and shallow. The sacrum is usually long—often composed of six segments—narrow, and typically ends in a dagger point. The sacrum is inclined backward and has a marked intrinsic curvature. The promontory is usually quite high above the symphysis, leading to an increase in pelvic inclination. The ischial spines are wide and blunt, and the sacrospinous

ligaments are long. The outlet is characterized by a moderately wide subpubic angle and average curvature of the rami. The side walls and lateral bore are usually divergent.

The physical form coinciding with the anthropoid type of pelvis is the tall slender variety of female with broad shoulders, moderate waist, narrow hips and straight slender legs.

The average measurements in a large series of anthropoid pelvises are: conjugata vera, 11.7 cm., transverse diameter 12.9 cm., and interspinous diameter, 10 cm.

Prognosis and Treatment—With the exception of the gynecoid pelvis the anthropoid variety offers the best obstetric prognosis. The anthropoid type is usually an adequate pelvis both quantitatively and qualitatively. Most of these pelvises are larger than average and fail to exhibit significant dystocia. Clinically, however, the type is difficult to recognize because the large anteroposterior diameter of the inlet leads on to classify them as gynecoid or normal pelvises.

In anthropoid pelvises, engagement occurs in the occiput transverse position in approximately 40 per cent, in occiput posterior 30 per cent, and occiput anterior 30 per cent of the cases. The usually abnormal occiput posterior positions should not be regarded as abnormal in this type of pelvis, in fact it should be considered as an even more favorable variety of engagement than the more frequent occiput transverse variety. Due to the relative transverse contraction of the inlet, engagement is frequently delayed until the fetal head adopts itself to the more favorable diameter of the inlet—namely, the anteroposterior diameter. This observation explains why a case in which disproportion seems evident on abdominal examination early in labor not rarely presents no disproportion a short time later.

If the vertex engages in the occiput anterior variety, the prognosis is usually good if no cephalopelvic disproportion exists. However, if the vertex engages in the occiput transverse position, high arrest occurs until the presenting part

spontaneously rotates or is artificially rotated manually or with a high mid-forceps operation. In large anthropoid pelvises the vertex may descend in the occiput transverse position until the outlet is reached, whereupon anterior rotation occurs or is effected by operative means at the level of arrest.

On the other hand, if the vertex engages in the occiput posterior position, descent may occur in this position to the lower pelvis, however, arrest may occur at any level. In cases of high arrest in occiput posterior variety in anthropoid pelvis, the indicated maneuver is elevation of the vertex with manual rotation to occiput anterior. If the arrest occurs in mid pelvis, two procedures are suggested. If the child is small, the well-known Scanzoni maneuver is indicated.¹⁸ In case the child is large, a pelvic application of forceps to the occiput posterior position with descent in this position to a lower level, followed by anterior rotation with the caput in sight, is a better procedure. In instances of low pelvic arrest in occiput posterior, the treatment depends on the outlet. At the outlet, if a wide subpubic angle exists, the vertex will rotate spontaneously. If, however, a narrow transverse diameter and subpubic angle exist at the outlet, the vertex will persist as an occiput posterior position. In these cases of persistent occiput posterior positions in anthropoid pelvises, if the posterior sagittal diameter is ample, it is best to deliver these infants as persistent occiput posterior positions either spontaneously or with a low-forceps operation. In cases in which the posterior sagittal diameter is not ample, the vertex should be rotated manually or with forceps and then delivered by traction in an occiput anterior position.

For the mid-forceps operations an axis traction forceps of one variety or another is probably most useful. For the low-forceps operations Simpson or Kielland forceps are very satisfactory. By remembering that, if no contraindication exists, internal podalic version and extraction is easy in this type of pelvis one may avoid many difficult high- and mid-

forceps operations At the completion of a version during the breech extraction, one should remember to bring the after-coming head into the pelvis with its long diameter coinciding with the anteroposterior diameter of the inlet.

4 Platypelloid Pelvis

Description—The platypelloid pelvis corresponds to the simple flat pelvis of the older classifications In the evolutionary scale they represent an ultrahuman variety of female pelvis The incidence of the parent type is only 4 per cent, but the platypelloid characteristic appears as a component element in the mixed types of gynecoid and android pelvis quite frequently The platypelloid form is almost equally common in both races but is somewhat more frequent in the white race The pelvic inlet is elliptical with the long diameter transverse and relatively near the mid plane of the inlet. The anteroposterior diameter is abnormally short, usually being 9.5 cm or less The salient characteristics of the superior strait are a long posterior iliac portion associated with a short anteroposterior diameter The anterior segment is a little wider than that of the gynecoid form The pelvic inlet is slightly smaller than average The sacrum, sacrospinous notch, ischial spines, subpubic angle, side walls, and lateral bore follow the characteristics of these elements in the gynecoid type

The average measurements in a large series of platypelloid pelvises were conjugata vera, 8.5 cm, transverse diameter, 14.4 cm, and interspinous diameter, 12 cm The average size of these pelvises are therefore small In Steele's series, although they made up only 8 per cent of the total, his cases were responsible for 20 per cent of those pelvises found contracted by radiographic methods and 14 per cent of those found contracted by clinical examination

Prognosis and Treatment—The platypelloid pelvises generally speaking offer a good prognosis if no disproportion exists Obstetrically, it is a much better pelvis than the android but not quite as good

as the anthropoid and far from as good as the gynecoid variety It has two great advantages that offset some of its failings First, it is easily recognized clinically as an abnormal pelvis even though it is overdiagnosed by designating some android pelvises as flat Second, the trouble that it sometimes causes during parturition exhibits itself early in labor If dystocia fails to arise before engagement, it is rare to have subsequent serious difficulty in this type of pelvis after engagement The reason for this is that all the abnormality lies at the inlet and this is easily discovered by internal pelvimetry If the abnormality is too great, which usually occurs if the conjugata vera is less than 9 cm, engagement may not occur In such a case, if a test of labor fails to result in engagement, an abdominal delivery is necessary However, if the conjugata vera is greater than 9 cm, the vertex usually engages and there is no further difficulty Engagement occurs in the favorable occiput transverse position in 80 per cent and in occiput anterior and occiput posterior positions each in 10 per cent of the cases

The only difficulty common in the platypelloid pelvis after the vertex has become fully engaged is deep transverse arrest—that is, arrest in low mid pelvis at the three-point landing region, namely, the plane determined by the two ischial spines and the last sacral vertebrae If this condition arises, forceps extraction is indicated In a platypelloid pelvis the point to remember about a forceps operation is that the forceps should extract the vertex in its transverse position and should not rotate the vertex to the anteroposterior position until the vertex reaches the pelvic floor Although the Simpson and Elliot forceps are used by many obstetricians with good results, of late the tendency has been to use the more recently developed forceps for this operation The Kielland forceps are usually adequate, but this maneuver is probably best carried out by the Barton hinged forceps, which are specially designed for use in a flat pelvis The maneuver is identical with that described above for

arrest in an android pelvis with straight side walls

Conclusions

1 The knowledge of pelvic architecture aids in judging the prognosis of parturition. The prognosis becomes successively worse in the following order: gynecoid, anthropoid, platypelloid, and android.

2 The small size and sharp angles of the android pelvis is often disguised clinically.

3 The appreciation of the pelvic architecture of any patient aids in selecting and properly executing any required obstetric maneuver.

4. Because of the fact that architecture can only be accurately determined from roentgen examination, such procedure is indicated at term in those patients in whom dystocia is anticipated on the basis of past history or clinical examination, and during labor in those patients experiencing unanticipated dystocia.

Summary

The significance of pelvic architecture, per se, in conjunction with other refinements in obstetric diagnosis, such as clinical mensuration and roentgen pelvimetry, is emphasized. A brief

description of the clinical and roentgenologic characteristics of the four parent types of pelvis is presented. The type of engagement, labor, and parturition expected in each class is described. Suggestions are made as to the management of expected or unexpected dystocia arising in patients with the various types of pelvis on the basis of their architectural features.

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TOBACCO AND ARSENIC POISONING

Tobacco as a possible source of arsenic poisoning is suggested in the *J.A.M.A.* for August 31 by E E Barksdale, M D, Danville, Virginia, who points out that lead arsenate has been used for years by farmers as an insecticide on the plant to kill the horn worm. He presents a series of cases of skin rashes in none of which was it possible to determine any source of arsenic other than tobacco. As a result of his findings in a group of patients being treated for syphilis he believes that any person under syphilitic treatment who gets a skin inflammation after injections of arsphenamine should not use tobacco in any form. Dr. Barksdale says that all of the tobacco on the American market contains arsenic in a form which may be taken up by the human body and that nothing is done during the agricultural or manufacturing process to remove it and that probably nothing can be done.

"Lead arsenate is essential to the tobacco industry," he says. "It should be considered as an industrial hazard. Farmers use it as an insecticide because it is the most efficient and inexpensive one available. Indeed, its efficiency is probably responsible for the fact that it remains

on the tobacco when it reaches the consumer. It has the property of sticking to the tobacco. This is the reason why it is so effective. Remaining on it throughout, it kills the young worms as they are hatched. It is impossible to wash it off because in so doing the tobacco would be ruined. There is no chemical process known that will remove it."

In discussing 8 cases of arsenical skin inflammation, Dr. Barksdale says. All the patients were emphatically cautioned against the use of tobacco and they recovered and have remained so since. Three of them have had mild recurrences every time they used tobacco.

He says that it is believed that patients get this dermatitis (skin inflammation) because they have a low point of tolerance to arsenic. Fortunately, the point of tolerance for arsenic of most persons is much higher than the amount of arsenic that one could consume from tobacco," he adds.

In conclusion Dr. Barksdale carefully points out that "This paper has attempted to present a theory. Its ultimate proof depends on the collaboration of other workers."

Case Reports

TOXIC AMBLYOPIA RESULTING FROM SODIUM DIPHENYL HYDANTOINATE

JESSE M. LEVITT, M.D., and MAX BLONSTEIN, M.D., Brooklyn

SODIUM diphenyl hydantoinate (Dilantin) is widely used in the treatment of epilepsy. Merritt and Putnam¹⁻³ reported its value as an anticonvulsant, and further studies by numerous authors⁴⁻¹⁷ have confirmed its efficacy. All agree that the drug is much more toxic than phenobarbital and the bromides and should consequently be administered under the constant supervision of the physician. With the latter proviso plus the suggestion that it not be recommended in the milder cases of epilepsy, the Council of Pharmacy and Chemistry of the American Medical Association accepted the drug.¹⁸ Its properties, dosage, and known toxic reactions have been described in the same report.

Toxic amblyopia resulting from the administration of sodium diphenyl hydantoinate has not been previously reported. Blurred vision has been noted as a side action of the drug in a small percentage of cases. Other ocular findings mentioned in the literature are diplopia, difficulty in focusing of eyes, nystagmus, and ptosis. It is possible that ocular phenomena as toxic manifestations of sodium diphenyl hydantoinate are quite common but overlooked.

Case Report

H. T., male, white, aged 27, complained on November 6, 1939, that his vision had been blurred for the past few weeks, that he was "totally blind" at night, and that he had been unable to read newsprint for the past seven to ten days. He had been wearing glasses since childhood, and the vision of the right eye even with glasses had always been poorer than the left.

He had had epilepsy since the age of 15. A study at the New York Post-Graduate Hospital in 1932-1934 disclosed "epileptiform attacks, petit and grand mal in character, bilateral in distribution, and occurring chiefly at night, etiology is probably associated with some form of cerebral maldevelopment or degeneration, encephalography supplied sufficient evidence to exclude intracranial neoplasm." For a period of ten to twelve years up to August, 1939, he had been maintained on a steady dosage of phenobarbital without any toxic reaction. For three weeks in August, 1939, he had been given sodium diphenyl hydantoinate, 0.1 Gm. three times daily. This had been discontinued when he was removed to Kings County Hospital following an epileptic seizure. During those three weeks, he reports that his eyeballs felt heavy, his vision was blurred, and he was generally more nervous and trembling. In October, 1939, the administration of

sodium diphenyl hydantoinate was resumed with the same dosage and up to November 6 he had taken a total of sixty-one tablets (0.1 Gm. each).

Ophthalmic examination on November 6 revealed that the vision of the right eye was limited to the perception of light and hand movements, vision of the left eye 20/200 unimproved by lenses or pinhole. He was wearing glasses—right eye, +3.00 cylinder axis 105° and left eye +3.00 cylinder axis 75°. Adnexae were normal, globes were white, pupillary responses were hyperactive, there was no nystagmus or muscle palsy, media were entirely clear, the fundi were of normal tessellated type with slightly oval optic disks of good color and fairly clear margins, slight tortuosity of the retinal blood vessels, and normal macular zones. The left eye had a full peripheral field of vision with an absolute central scotoma. Sodium diphenyl hydantoinate was discontinued. On November 11 the corrected vision of the right eye had improved to counting fingers at 5 feet and that of the left eye to 20/100, both eyes presented full peripheral fields of vision, normal blind spots, and central color scotomas for red, green, and blue. On November 15 the vision of the right eye was counting fingers at 10 feet, that of the left eye was 20/50-51. On November 21, the vision of the right eye was 20/100 and that of the left eye 20/40, the central scotomas for colors could no longer be demonstrated. Further examinations on November 24, 27, and 30 disclosed the same corrected visual acuity for each eye. Corrections for refractive error were: right eye, -1.50 sphere +3.00 cylinder axis 105° and left eye +3.50 cylinder axis 75°. The final vision is not the normal standard. Persons with a high degree of astigmatism frequently have defective vision even with the most accurate correcting spectacles. In addition to withdrawal of the drug, treatment consisted of the oral administration of thiamin chloride and cevitamic acid and three intramuscular injections of 0.1 Gm. each of acetylcholine solution.

Summary

A case of toxic amblyopia resulting from the administration of sodium diphenyl hydantoinate in an epileptic is reported. Vision was promptly recovered upon withdrawal of the drug. We suggest that blurred vision during treatment with sodium diphenyl hydantoinate should signal discontinuance of the drug or at least diminished dosage and closer observation.

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(Nov. 4) 1939

NONPNEUMOCOCCIC PNEUMONIA SIMULATING TYPHOID FEVER*

JOHN FITCH LANDON, M. D., New York City

THIS case is presented as a nonpneumococcic pneumonia simulating typhoid fever. However, because of the unusual clinical and laboratory features, it seems fairer, and may I say wiser, to present to you the facts and then allow you to draw your own conclusions, the speaker assuming the usual prerogative of stating his reasons for his final diagnosis.

Case Report

R. R., white girl, aged six, was admitted to the Children's Ward of the Roosevelt Hospital on December 25, 1938. The child had been ill for one week prior to admission, with fever and an occasional dry cough. For the last three days of illness she was delirious. Outside of measles and pertussis and frequent colds, the previous health had been excellent. One grandfather died of tuberculosis when the child was an infant, otherwise the family history was negative.

On admission the patient appeared critically ill with a temperature of 104 F., pulse 120, and respirations 26. Marked delirium and carphology were present. The throat was slightly injected with a postnasal drip, slight rigidity of the neck was noted. There were a few rales at the bases of both lungs, but no change in resonance or breath sounds. The spleen was readily palpable. Otherwise the physical examination was negative.

The laboratory gave very slight aid in establishing a diagnosis, the only unusual finding being a white blood cell count of 5,700 with 80 per cent polymorphonuclears. The red blood cell count was 4,600,000, the hemoglobin was 55 per cent. Blood culture was negative and the blood chemistry was within normal limits. The stool cultures were negative for typhoid and paratyphoid. Urine was negative. The Bacillus brucella reaction was negative. No *Widal* was done on admission. Pharyngeal swab revealed no pneumococci. X-ray of the lungs on the second day after admission was reported as "an acute respiratory infection with accentuated peribronchial markings of both upper lobes and no confluent consolidation."

For the first ten days after admission the course

was extremely stormy, with continued high temperature, reaching 106.6 F. at one time, and persistent delirium with complete disorientation. Encephalitis was suspected, but a lumbar puncture proved to be entirely negative.

The child received infusions, clyses, and three successive transfusions on the eleventh, twelfth, and thirteenth days of illness. Sulfapyridine was started on the day after admission but had no effect on the general condition or temperature which became progressively higher so that the drug was discontinued after five days of use, the total dosage employed being 8 Gm.

Successive roentgenograms from the seventh to the eighteenth day of illness showed an increase in accentuation of the bronchial markings of both lung fields, with a bronchopneumonic process of the left upper lobe and a well-marked infection of the right upper lobe. Five days after admission there was reported "an unusual enlargement of the cardiac shadow."

Because of the continued high temperature and low leukocyte count and the persistence of splenic enlargement, typhoid fever was suggested, and to our great surprise, a *Widal* done on the sixth hospital day and the thirteenth day of illness proved to be positive in a dilution of 1-180 (formalized antigen). On the tenth hospital day an agglutination in the same strength was present, and eight days later the *Widal* was fading in strength becoming completely negative twelve days later. The white blood cell counts remained consistently at low normal.

Beginning with the tenth hospital day there was gradual improvement in the child's condition, the sensorium began to clear, and the temperature dropped to 101 F. On the fourteenth hospital day abscesses of both thighs developed at the sites of the frequent clyses. These were incised and drained, and they healed slowly. Culture revealed a *Staphylococcus albus*, the same organism being cultured from the left ear that had to be incised on the thirty-seventh day of illness.

The patient was discharged to a convalescent home on the seventy-sixth day of illness.

Discussion

No absolutely conclusive diagnosis can be made in this case. In favor of a diagnosis

* Read before the Pediatric Section, The New York Academy of Medicine, May 1939.

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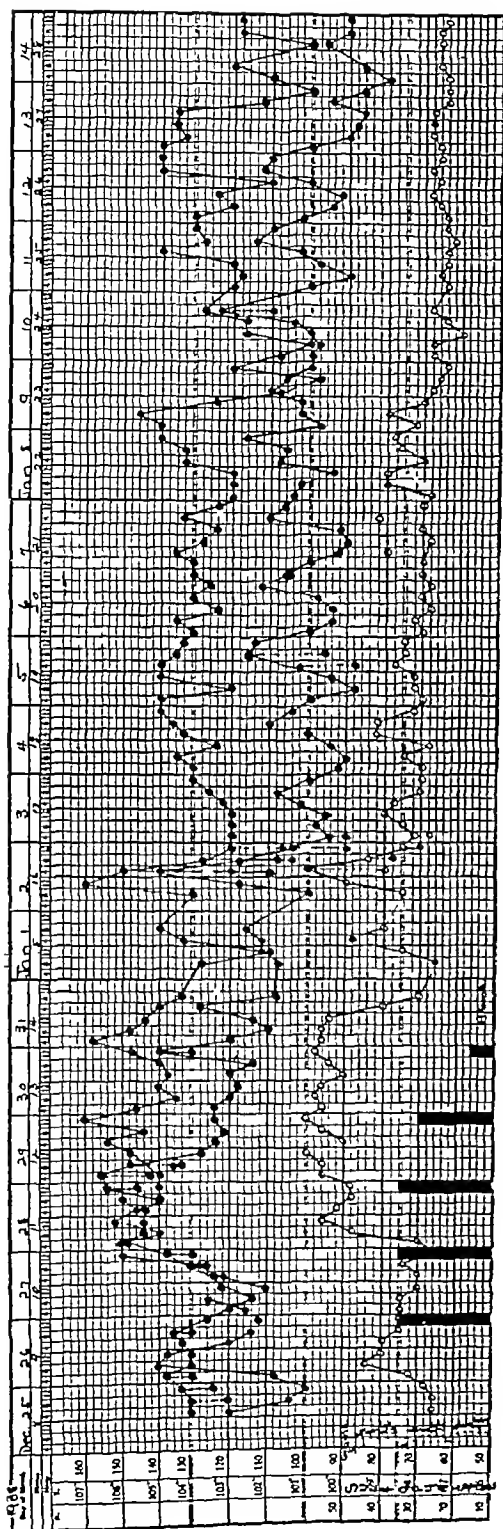
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Discussion

No absolutely conclusive diagnosis can be made in this case. In favor of a diagnosis



enteric fever is the persistent leukopenia in the presence of very high temperature, a palpable spleen, a clinical course which is not at variance with that most protean of diseases, and three Widal's in a fairly high agglutinin

Against the diagnosis of typhoid fever is primarily a weakening of the Widal reaction and complete cessation of agglutination within five weeks after the first appearance of this reaction. The persistence of a positive Widal for several months after an infection with *Bacillus typhosus* is universally conceded, although older clinicians claim that twenty-five years ago, when the disease was much more prevalent, this reaction occasionally became negative after a relatively short period. In this case it was originally thought that the first Widal, the blood for which was taken two days after the first transfusion, might have been due to passive transfer of agglutinating substances from the donor, but the donor's Widal performed six weeks after the first transfusion proved to be negative.

An additional argument against the diagnosis of typhoid fever was the persistently negative stool and urine cultures for *Bacillus typhosus* or paratyphosus and the absence of the usual intestinal symptoms of the disease

Summary

In conclusion, therefore, although it is recognized that typhoid fever frequently runs a bizarre course, especially in infants and children, the diagnosis of the disease in this case, in view of the controversial data presented, obviously must remain unsettled.

The failure to obtain any type of pneumococcus from pharyngeal swabs, the complete lack of response to an adequate course of sulfapyridine plus roentgenologic evidence of a pneumonia at a time when an epidemic of so-called "viral" pneumonias was present in the city led us to a conclusion that the best final diagnosis was "non pneumococcal pneumonia simulating typhoid fever"

112 East 74th Street

Thirty-Fourth Annual Meeting of the Second District Branch

PROGRAM



Wednesday, November 13, 1940

Post Theater, Mitchel Field, Garden City, New York

Foreword

In view of the world situation a timely topic for the Second District Branch Meeting is "Military Medicine."

Arrangements have been made to hold this meeting at Mitchel Field, L I, through the courtesy of the Commanding Officer of that Post

As usual there will be a morning and afternoon session with a luncheon in between. At the luncheon, we shall hear from the President of the Medical Society of the State of New York, Dr Flynn

Instead of the usual exhibit there will be an opportunity to inspect various types of military aircraft

Since the luncheon will be held at the Officers' Club, facilities will be less elastic than at a hotel, and it is *absolutely essential that reservations be made in advance*. Please help us by making your reservations early

Mitchel Field can be reached by automobile or by train. It is located on Stewart Avenue, just east of Garden City. Those coming by train should get off at Country Life Press where a trolley car will meet the train and bring you to Mitchel Field. There will be parking facilities at the Field for those coming by automobile

LOUIS H. BAUER, M D, *president*

10 00 A.M.

1 Plans of the Medical Profession for National Preparedness and Mobilization Samuel J Kopetzky M D, *chairman*, Military Preparedness Committee, Medical Society of the State of New York

2 General Principles of Medicomilitary Care and Evacuation Colonel Julius Blank, M C, U S A Headquarters, Second Corps Area.

3 Plastic Surgery in Connection with General Medical Work Clarence R. Straatsma M D, New York City

12 00

Inspection of various types of aircraft Parade Ground, Mitchel Field

COURSE ON SOCIAL ASPECTS OF MEDICINE

A course of six lectures on the social aspects of medicine given by Dr C-E A Winslow and Dr Franz Goldmann of Yale University School of Medicine at the New School for Social Research began on October 3

Dr Winslow gave the first lecture and will give the last lecture as well as one on October 17

1 00 P.M.

Luncheon Officers' Club, Mitchel Field (The luncheon will cost \$1.25 per plate. Reservations must be made in advance)

a Short Business Session with election of officers for 1941-1943

b Welcome to Mitchel Field Brig General Douglas B Netherwood, Air Corps, Commanding Officer, Mitchel Field

c Address—James M Flynn, M D

2 00 P.M.—Program continued at Post Theater

1 The Treatment of Head Injuries Lt Col M F DuFrenne, M C., U S A Post Surgeon, Fort Jay, New York

2 Hospitalization, in the Zone of the Interior and in the Theater of Operations Col Floyd Kramer, M D, U S A Post Surgeon, Fort Totten, New York.

3 The Practical Phases of the Early Recognition and Management of Shock Virgil Moon, M D, professor of pathology, Jefferson Medical College

4 Aviation Medicine Lt Col Charles L Maxwell, M C, U S A Post Surgeon, Mitchel Field

Woman's Auxilliary Meeting

The woman's auxiliaries to the Medical Societies of Kings, Queens, Nassau, and Suffolk will hold a joint meeting, under the chairmanship of Mrs L H Kice, president of the State Auxilliary, at the meeting of the Second District Branch of the Medical Society of the State of New York

The meeting will be held at the Officers' Club, Mitchel Field, L I, on November 13, 1940

There will be a brief session in the morning at 11 A.M. The members will then join the members of the Branch at luncheon at which Dr James M Flynn, president of the Medical Society of the State of New York, will speak

After the luncheon, Dr Samuel J Kopetzky will address the auxiliaries on the part that they can play in medical preparedness. Dr Kopetzky is president-elect of the State Society and chairman of its Committee on Military Preparedness

This address will be followed by a bridge party

During the course the following aspects will be discussed: the fundamental problem, the basic principles of social medicine, the recommendation of the Committee on the Costs of Medical Care, and recent developments in the field, also a national health program will be outlined

Public Health News

Medical Education Program Expanded

THE Council Committee on Public Health and Education of the Medical Society of the State of New York arranged a Teaching Day on Rheumatic Fever which was presented to the Onondaga County Medical Society on October 1, 1940, in Syracuse, New York

The Teaching Day plan increases the amount of clinical teaching in the Society's postgraduate medical education program. A Teaching Day may be devoted to a single subject, or several subjects, with clinics conducted by eminent specialists in their fields on the afternoon of the day selected, and an evening meeting when the visiting physicians lecture and present their subjects for general discussion.

In Syracuse, Dr. Homer F. Swift, of the Hospital of the Rockefeller Institute for Medical Research, New York City, was the principal speaker. He conducted a clinic at the Syracuse Memorial Hospital in the afternoon and his subject for the evening meeting was rheumatic fever. The discussion was opened by Dr. Edward C. Reifensien and Dr. J. G. F. Hiss, of Syracuse. This program on Rheumatic Fever was presented in cooperation with the New York State Department of Health.

A Teaching Day for the Monroe County Medical Society was held in Rochester on October 9. The subjects for discussion were arthritis, by Dr. Russell L. Cecil, Cornell University College of Medicine, New York City, backache, by Dr. Samuel Kleinberg, of the Hospital for Joint Diseases, New York City, and thyroid diseases, by Dr. Merle Scott, of the University of Rochester School of Medicine.

The Medical Society of the State of New York has conducted postgraduate courses for many years. These courses cover a wide variety of subjects and are available for county medical societies, hospital staffs, and other medical organizations. In addition to the courses consisting of series of lectures, speakers are supplied for numerous other meetings, clinics, and conferences. Often the New York State Department of Health and other agencies join with the State Medical Society in the educational program.

In addition to the regular courses, teaching days, and special lectures, institutes consisting of conferences and laboratory studies are being arranged. These institutes sponsored by the State Department of Health and the State Medical Society will be devoted to the subjects of pathology and radiology. Several will probably be held at hospitals and medical schools in different parts of the state. The cost of courses, lectures, teaching days, and institutes is borne by the State Medical Society and the State Health Department. The activities receiving joint support include maternal and child welfare, rheumatic fever, tuberculosis, orthopedics, pneumonia, cancer, and syphilis.

The State Department of Health and the State Medical Society take an active part in the health program of the 4-H Clubs and other youth organizations. A special committee of which Dr. J. G. F. Hiss, of Syracuse, is chairman, directs this program.

The Council Committee on Public Health and Education reports that nineteen counties have already requested courses, lectures or teaching days. This demand, at this time of year, exceeds previous years.

As a part of the Defense Program, the Medical Society has increased instruction in public health and sanitation, plastic and reconstructive surgery. Lectures, demonstrations, and clinics on these subjects are being added to the regular program. In some counties, programs will be given which will consist of intensive courses on these subjects.

Requests for information regarding the postgraduate medical education program should be addressed to

O. W. H. MITCHELL, M. D., *chairman*
Council Committee on Public Health and Education
Medical Society of the State of New York
428 Greenwood Place
Syracuse, New York

Medical News

County News

Chautauqua County

Physicians of the county want every township of Chautauqua to have the advantages of the county laboratory service and discussed the question at a meeting of the county medical society held on September 11 at Newton Memorial Hospital.

At present, 60 per cent of the townships of the county have the services of the laboratories in Jamestown and Dunkirk. Appropriations from each township must be voted by the supervisors to participate.

Forty doctors were guests of the board of managers of the Cassadaga Hospital preceding the meeting. Dr. Louis A. Siegel, of Buffalo, gave a paper on the report of the Buffalo physicians who have made a survey of maternal mortality in Erie County.

Dr. Harold M. Childress won the annual Jamestown Medical Society golf tournament, on September 12 over the Westfield Gorge Golf Club course. The winner had a net 68 score, his handicap being 24.

Chemung County

The Chemung County Board of Supervisors have voted down a proposal to create the position of county supervising physician, recommended by the welfare committee. A member of the board said he had discussed the plan with six prominent Elmira physicians and none of them favored it.

Cortland County

The Medical Society of the County of Cortland held the first of a series of monthly meetings to be addressed by local members on September 20, at the Nurses Home of the Cortland County Hospital. Dr. Harold E. Andrews addressed the society on "Bleeding in the Last Trimester of Pregnancy." Dr. Andrews outlined the many causes of late bleeding and then went into some detail on the causes, progress, treatment, and end results in premature separation and in low implantation of the placenta.—*Reported by W. A. Wall, M.D., Secretary*

Dutchess County

A meeting of the Dutchess County Medical Society was held at Poughkeepsie on September 11.

Members of the Board for Qualifications were elected for three years.

Dr. Arthur J. Wallingford, chief gynecologist of the Albany Hospital, spoke on "Endometriosis." Sixty were present.—*Reported by H. P. Carpenter, M.D., Secretary*

Erie County

Buffalo has long been prominent in ophthalmologic circles, many of her eye physicians have held prominent places in national and international societies. Men like Drs. Alvin Hubbell, Lucien Howe, Lee Masten Francis, Arthur G. Bennett were known the country over.

On September 10, Dr. F. Park Lewis joined these men, ending a notable career of over sixty years. He was vice-president of the National Society for the Prevention of Blindness, a group in which he was particularly interested. He was a member of the board of visitors of the New York State School for the Blind at Batavia, where the new dormitory was named in his honor.

The author of many publications, Dr. Lewis was the recipient of the Chancellor's Medal of the University of Buffalo and the Leslie Dana Award of the American Medical Association. He held honorary and active membership in many societies, far and near.

Buffalo will miss this skilled, kindly gentleman and scholar, who achieved a deserved, worldwide recognition.—*Reported by Louise Beamis M.D., Secretary*

Extension of the Western New York Medical Plan, Inc., to include all income groups and a new provision permitting participation in only the surgical portion of the plan has been effected.

Changes in the plan do not affect present subscribers but will permit a much larger group to participate in the nonprofit community medical plan, Dr. George R. Critchlow, medical director announces, as reported in the *Buffalo Evening News*.

Under the new arrangement a subscriber having an income in excess of \$3,000 may enroll his family in either the combination medical and surgical plan or just the surgical plan. Reimbursement for subscribers in the higher income group receiving medical treatment or surgery is paid to participating physicians according to a definite rate schedule.

Any difference between a physician's rate and the indemnity schedule would be paid by the subscriber.

For persons and families who feel they are able to pay for ordinary medical fees incurred during the year but desire surgical obstetrical protection the new plan provides a lower rate.

Thus, for the family group the monthly rate for medical and surgical care is \$3.00 and for surgical care alone \$1.70. Both contracts provide for maternity care and include unmarried children under 18.

Under the former plan individual subscribers were limited to persons having an income of \$1,800 or less, subscribers and one dependent to those having an income of \$2,500 or less. Persons who have reached their sixty-fifth birthday are not eligible.

Maternity care on the family contract is given after the first year, including an allowance of \$50 if a specialist is engaged instead of the family physician.

Subscribers may consult their family doctor providing he is a participating physician. More than three-fourths of Western New York, excluding Niagara and Chautauqua counties, is covered. There are 739 participating physicians.

Jefferson County

A medical advisory board for the district composed of Jefferson, Lewis, and Oswego counties has been set up as required by the conscription act of Congress and was officially approved by the Jefferson County Medical Society at the regular meeting of the society on September 12 at the Black River Valley Club.

The eight men who compose the board are Dr Walter Fox Smith, Dr Walter S Atkinson, Dr James E McAskill, and Dr Harlow G Farmer, Watertown, Dr Kent Wood Jarvis, Dr Francis L Carroll, Dr Harrison Wallace, and Dr Frank McCormack, Oswego. Dr McCormack is a dentist.

The members of the board were appointed by the presidents of the Jefferson County Medical Society and the Oswego County Medical Society. The purpose of the board will be to render professional opinion on doubtful cases referred by local draft boards.

The medical society also passed a resolution to have a committee on medical preparedness established and the following were elected members of the committee: Dr Harold L Gokey, Alexandria Bay, chairman, Dr Francis J Lawler, Carthage, Dr Sutherland E Simpson, and Dr Garner Scullard, Watertown.

The speaker of the evening was Dr William Siegal, director of the division of tuberculosis of the New York State Department of Health, who discussed tuberculosis of the adult.

Kings County

The Brooklyn College of Pharmacy of Long Island University, cooperating with local medical associations and societies, is planning a course of fifteen lectures and laboratory demonstrations in prescription writing for the skin in health and disease.

The topics and speakers for the Friday afternoon lectures at the MacNaughton Auditorium on October 18 and 25 at 4 00 P M will be as follows: Oct 18—"Regional and Local Analgesic Injections for Local and Intractable Pain," by Dr James M Tarsy, Oct 25—"Diagnostic and Therapeutic Aspects of Sterility," by Dr Samuel L Siegler.

In the courses in contemporary medicine arranged by the Clinical Committee, Dr Kenneth G Jennings will speak on meningitis, and Dr Max A Goldzieher will speak on gynecologic aspects of endocrinology, on October 21 at 4 00 and 4 45 P M. On October 28, at the same hours Dr Walter F Watton will discuss respiratory infections, and Dr Jacob Rosenblum will discuss blood-stream infections.

Monroe County

Seeking coordination of all public and private health agencies, the Monroe County Medical Society has enlarged its busy Medical Defense Committee.

Dr Albert D Kaiser, president, announcing new appointments to the group, said they would establish liaison between official city and county preparedness committees. The enlargement was made at the request of Dr Charles P Thomas, committee chairman. New members follow Dr Christopher G Parnall, superintendent of General Hospital, who will represent hospitals,

Dr Walter S Thomas, director of the county bacteriologic laboratory, who will represent the county, Dr Paul A Lembcke, district state health officer, who will represent the state, and Dr George P Berry, who will represent the University of Rochester Medical School.

On September 18 death came in Strong Memorial Hospital to Dr George W Goler, 76, retired Rochester health officer whose medical career was devoted to child health and hygiene.

Dr Goler retired in 1932 after thirty-five years as health officer, during which time he established there the first municipal milk station and first prenatal clinics in the country.

His closest ally in a long fight to establish municipal milk stations for the feeding of babies was the late Nathan Straus, philanthropist.

In a "better milk for babies" campaign which he conducted with Straus, Dr Goler made a speaking tour of western states, urging universal adoption of his principles.

He established the first two of his famous child welfare stations here in 1896. By the 1930's the number had increased to more than fifty. The stations made the services of trained nurses available at all times to give advice on common child complaints.

Medical historians credit Dr Goler with making medical history in 1904 with the establishment of the first prenatal clinics. Dr Goler counts this one of his hardest won victories, for the new idea at first made little progress against the traditional practice of employing a midwife.

To Dr Goler and to the deputy health officer, Dr Joseph Roby, goes credit for the establishment of one of the first venereal disease clinics in the country.

Dr Goler attracted medical attention to Rochester again in 1926 when he was victorious in a long fight to introduce iodine into the city drinking water supply to combat adolescent goiter.

At his death he was reported to be working on a book, "The History of Medicine in Rochester."

Montgomery County

On September 21 Dr Kurt Hans Semsroth, pathologist of the Amsterdam City Hospital and St Mary's Hospital, died at Raybrook, N Y, of pulmonary tuberculosis.

He was a member of the American Association of Bacteriologists and Pathologists, American Association for the Advancement of Science, New York State Association of Pathologists and Bacteriologists, and assistant pathologist at the Albany Medical College.—Reported by Roger Conant M D, Secretary.

At a meeting of the Medical Society of the County of Montgomery on September 10 at the Elks Club in Amsterdam, Dr Thistle McKee of the State Department of Health, presented a paper on infantile paralysis and spoke of various epidemics during the past several years. It was brought out that there were no more cases of the disease reported and that the present epidemic appeared to be under control.

Nassau County

The program of the Nassau County Medical Society on September 24 was as follows: (1) sound motion picture, "Twixt the Cup and the

Lip," presented by the New York State Department of Health, (2) business session, (3) scientific program—"Communicable Disease Control," by Dr J P Leake, medical director, United States Public Health Service.

New York County

The long and far-reaching arm of the law has finally caught up with the handsome Lothario, who, through the gullibility of some of our colleagues, has made for himself a tidy sum of money with only a diseased pair of tonsils and a glib tongue as collateral, says the *Medical Week*.

Some months ago, a doctor who had been hoodwinked by this man sent in a letter of warning to the *Medical Week*. This letter was printed in the *Public Forum* and was greatly instrumental in bringing about the capture of Harlin Harrington, alias Hamlin.

Harrington's method of approach would be very decorous and deceptive because of his good looks and fine and congenial manners. His complaint would be that of having a constantly inflamed throat. Upon due examination, the diagnosis would be diseased tonsils. Being advised that a tonsillectomy was indicated, he would immediately request that the operation be booked for the following day. He would be quite magnanimous about the fee.

All of this being taken into consideration, in the course of conversation he would inject the fact that his brother was a well-known jockey and that he had a good tip on a horse which he was going to bet on that afternoon. His manner would be so convincing and engaging that a feeling of good fellowship would be established between the doctor and the would-be patient. With visions of his horse coming in first, our good colleagues were soon parted with their money.

Of course, this would always mean the disappearance of Harlin Harrington, alias Hamlin, who would retain his diseased tonsils for another visionary doctor.

However, similar incidents have been constantly reported to the police, and Detective Moran of the Nineteenth Squad finally made his arrest the other day.

The following are some of the details in the career of Harlin Harrington, alias Hamlin.

He has been preying on the men of the medical profession throughout New York State for a number of years and has actually made from \$40 to \$90 a day by the above-stated method. He was arrested eight years ago in Schenectady on a similar charge, but the case was dismissed as the doctor who made the accusation would not prosecute. He will now be prosecuted to the full extent of the law, as there are a number of victimized physicians who are willing to testify against this human parasite.

Dr George W. Jacoby, a specialist in nervous diseases who had practiced for sixty years, died on September 11 at his home, 44 West Seventy-second Street, at the age of 83. He was president of the American Neurological Association in 1915.

Among his books are *Electrotherapy, Suggestion and Psychotherapy, Child Training as an Exact Science, The Unsound Mind and the Law, Electricity in Medicine*, the last in collaboration with his brother, Dr J. Ralph Jacoby, and *Physician, Pastor and Patient*, published in 1936.

Onondaga County

Names of Syracuse and Onondaga County physicians recommended by the Medical Preparedness Committee of the Onondaga County Medical Society for selection to serve on a Syracuse wartime medical advisory board of eight and with each of the draft boards in the city and county were revealed on September 17 by Dr Brewster C. Doust, president of the society, Dr Edward S. Van Duyn, chairman of the society's medical preparedness committee, and R. Marcus Dick, executive secretary of the society.

Recommended for the medical advisory board of eight are Dr Albert A. Getman, chairman and internist, Dr Carlton F. Potter, radiologist, Dr Nohle R. Chambers, psychiatrist, Dr Brooks W. McCuen, surgeon, Dr Richard S. Farr, orthopedist, Dr Mortimer G. Brown, otolaryngologist, Dr Harold H. Joy, ophthalmologist, and Dr C. B. Frawley, dentist.

Recommended for service with district draft boards (one to be chosen for each district by Governor Lehman) are

Syracuse districts: Dr Clifford E. McElwain, Dr Sidney A. Britten, Dr Wendell V. Brown, Dr George B. Andrews, Dr Albert A. Bailey, Dr C. George Murdock, Dr J. Winthrop Pennock, Dr A. Carl Hofmann, Dr John B. Alsever, Dr James G. Derr, Dr Ralph R. Scobey, Dr Raymond J. Devine, Dr Arthur D. Meyers, Dr Tracy L. Bryant, Dr Walter W. Street, Dr DeWitt Brougham, and Dr Harold M. Totman.
Baldwinsville district: Dr Robert B. Hagen, of Liverpool and Dr Willard A. Loomis, of Baldwinsville.

Manlius district: Dr T. Ralph Wilcox, of Manlius, and Dr G. J. Bryan, of Fayetteville.
Skaneateles district: Dr Frank G. Dye and Dr William R. Dolan, both of Skaneateles.

Tully district: Dr Marcus S. Richards, of Tully, and Dr John J. Gossner, of Falmouth.
Four of the physicians named, Drs Richards, Murdock, Alsever and Bryant, hold commissions in the medical section of the Reserve Officers Training Corps.

Members of the Utica Academy of Medicine united with the Syracuse organization for an outing at the Bellevue Country Club, Syracuse, on September 17.

Dr Philip L. Turner, Utica, spoke on "Temporomandibular Arthropathy in Serum Sickness." Dr Keith Preston spoke on "Prevention and Control of Toxemias of Pregnancy by Regulation of Water Balance and Control of Anemia."

The physicians and surgeons played golf during the day and dinner was served at 7:00 P. M. A luncheon for golfers was served from noon to 2:00 P. M. The program followed the dinner.

Ontario County

Disorders of the stomach was the theme of an address by Dr L. Pulsifer, of Rochester, on September 12, before members and guests of the Canandaigua Medical Society at the first fall meeting. Dr Margaret T. Ross was hostess at Brigham Hall.

Dr William A. Howe, 78, of Phelps, retired deputy commissioner of health for New York State, died on September 11 at the Clifton Springs Sanitarium.

Before becoming associated with the State Department of Health, Dr Howe had practiced medicine in Phelps for twenty years, during which time he was active in the affairs and once was president of the Ontario County Medical Society. He became director of the division of communicable diseases in the New York State Department of Health in 1909 and subsequently deputy commissioner of health of this state when that position was created in 1910.

In 1927 Dr Howe organized and was the first president of the American Association of School Physicians, he was president of the pension examiners of the United States, and president of the child hygiene section of the National Education Association. Acknowledging his unusual accomplishments in the field of health among school children, Hobart College awarded him the honorary degree of L.L.D. in 1930. He also was awarded by the State of California the Lung Medal for distinguished service to child health.

Orleans County

Dr Robert P. Munson, of Medina, who died there on September 11 at the age of 43, was secretary-treasurer of the Eighth District Branch of the State Society in 1929-1930.

Oswego County

The Oswego Academy of Medicine has given an urologic x-ray table to the Oswego Hospital. The table will make it possible to take x-ray pictures of kidney and bladder conditions without moving the patient from the examining table. It can be easily equipped with a device to take serial x-ray photographs, similar to motion pictures of the organs in action.

Otsego County

The September meeting of the Otsego County Medical Society was held on September 11 at the Cooper Inn, Cooperstown.

A committee was appointed to formulate resolutions on the sudden death of Dr F. J. Atwell, who served as secretary of the Otsego County Society for eight years.

At the business session, Medical and Surgical Care, Inc., as inaugurated under the leadership of physicians of Utica, was explained to the society by Dr F. M. Miller and Mr H. C. Stephenson, president and managing director, respectively, of this organization. The Otsego County Society voted to endorse this plan.

At the scientific session, Dr Louis C. Kress of Albany, presented an illustrated talk on "The Recognition of Some of the Common Malignancies." There was discussion by Dr Darrell Ayer, of Cooperstown, and Dr James Greenough, of Oneonta. Dr Greenough outlined briefly the satisfactory development of the local cancer clinic at the Fox Memorial Hospital in Oneonta.

Queens County

The program of the Medical Society of the County of Queens on September 24 was as follows: "The Treatment of Tuberculosis," by Dr J. Burns Amberson, Jr., physician-in-charge of tuberculosis, Bellevue Hospital, "Tuberculosis in Childhood," by Dr Charles Heidde Smith, pediatrician, Bellevue and Presbyterian hospitals. The discussion was by Dr Herbert R. Edwards, director, Bureau of Tuberculosis,

Department of Health. The scientific exhibit was "The Pathology of Tuberculosis."

The subjects and speakers of the Friday afternoon talks on October 4 and 18, at 3:30 P.M. are October 4, "Obstetric Shock," by Dr Harvey B. Matthews, F.A.C.S., obstetrician and gynecologist, Methodist and Long Island College hospitals, October 18, "Treatment of Chronic Arthritis," by Dr Martin H. Dawson, associate physician, Presbyterian Hospital.

The following members have been appointed to serve on the society's Medical Preparedness Committee: Dr H. P. Mencken, chairman, Dr James Dobbins, Dr Frank Dealy, and Dr William K. Rogers.

The Graduate Education Committee offers physicians and their friends an opportunity to improve their Speech, develop Confidence, Poise, and Personality. Arrangements have been made to repeat this course under the direction of Augustus E. Califano, who has successfully conducted two such courses for the society during the past two years.

Schenectady County

The Schenectady County Medical Society had an old-fashioned clambake at the farm of Dr E. MacD. Stanton, Scotch Ridge Road, on September 19. Preceding the bake there was a softball game in which Dr F. Leslie Sullivan, of Scotia, pitched his team to a 39-37 victory over the opposing team headed by Dr P. F. Purcell. The affair was attended by about two hundred physicians and friends.

Wayne County

More than 60 physicians, lawyers, and dentists of Wayne County attended the annual outing of the county's professional men's clubs on September 10 at Newark Country Club.

James Donahue of Geneseo, humorist, spoke to the group following a 6:30 P.M. indoor clambake. Guests also participated in an afternoon golf program.

Members of the Wayne County Medical Society, Wayne Bar Association, and Wayne Dental Society attended.

Westchester County

The Westchester County Medical Society opened its fall program of scientific work on September 17 at the New York Hospital, Westchester Division, when more than two hundred physicians gathered to hear a paper by Dr William Thalheimer, director of the Manhattan Convalescent Serum Laboratory, on "The use of human serum in combating infectious diseases and in treating shock."

In the executive session a report was received from the society's special committee on medical preparedness, which was organized in June under the chairmanship of Dr Erich H. Restin of Mount Vernon. The committee reported that more than 80 per cent of the physicians practicing in the county had responded to an exhaustive questionnaire giving the committee complete data concerning their professional and personal qualifications with respect to possible active service with military forces in the field.

The committee is cooperating with the Westchester County Hospital Association in surveying

hospital facilities and with nursing organizations in obtaining data concerning nursing personnel Dr Vier announced the appointment of Dr Ralph T B Todd, of Tarrytown, as chairman of a nominating committee composed of himself, Dr W S Martens, of Peekskill, Dr Walter J Halloran, of Yonkers, Dr Robert C Towse, of White Plains, Dr R E Tschon, of Katona, Dr John V Hibbard, of Port Chester, Dr Manville W Norton, of New Rochelle, and Dr Arthur H Hardy, of Mount Vernon, to present nominations for officers of the society for the coming year at the next meeting of the society in

October The election of officers will take place at the annual meeting in November

The feature of the county society's program on October 15 is a paper on "An Evaluation of Newer Laboratory Methods," by Dr William P Thompson, assistant professor of medicine, College of Physicians and Surgeons, Columbia University

The Medical Society of Mount Vernon inaugurated activities for the fall season on September 12 with golf followed by a dinner at the Pelham Country Club

Deaths of New York State Physicians

Name	Age	Medical School	Date of Death	Residence
Donald V Burns	39	L I C Hosp	August 25	Brooklyn
Marietta Catalano-MacLean	42	Buffalo	August 3	Buffalo
Myron P Denton	81	Harvard	July 22	Manhattan
George V Duffy	55	Fordham	September 6	Queens Village
Frank M Hall	68	Baltimore Med	September 6	Sylvan Beach
William A Howe	78	P & S N Y	September 11	Phelps
Charles S Hunt	65	P & S N Y	September 11	Manhattan
George W Jacob	83	Bellevue & Berlin	September 11	Manhattan
William H Jessup	65	Buffalo	September 18	Hollis
Frederick R Johnson	32	P & S N Y	September 18	Manhattan
Philip Leibowitz	53	L I C Hosp	August 29	Brooklyn
Francis P Lewis	85	Pulte	September 10	Buffalo
Robert P Munson	43	P & S N Y	September 11	Medina
Ludwig Oulmann	65	Wurzburg	September 16	Manhattan
William D Peckham	66	Baltimore Med	September 9	Utica
Joseph D Slack	59	P & S N Y	September 7	Bronx

WHAT THE A.M.A STANDS FOR

The American Medical Association stands for orderly and continuous progress toward better health for every American citizen. It stands for the elimination of every influence which may be destructive of the public health. It stands for the elimination of every communicable disease. It stands for the elimination of quackery. It stands for better general understanding of personal health problems. It stands for the promotion of research into fundamental causes of disease and curative therapy. It stands for better education of all physicians, not only the undergraduate but the general practitioner who has been long in service. Its platform stands for the coordination of all governmental health functions in order to promote efficiency and eliminate duplication of effort and wasteful extravagance of the people's money. It stands for the treat-

ment of the sick in their homes by local physicians and welfare agencies—where the real individual troubles are known—and it desires as little interference by the central government as may be consistent with constructive relief of personal suffering. Its program is entirely forward looking and it seeks to carry it on in conformity with the best traditions of an advanced democracy.

The dictators of organized medicine are the practitioners of medicine, every one of whom has a voice which will be heard when it expresses a constructive thought, even though it expresses adverse criticism. Nothing short of the best public service the organization can give will content the great body of medical opinion that is represented by the American Medical Association.—
Nathan B Van Elten, M.D.

Medicolegal

LORENZ J. BROSNAN, ESQ

Counsel, Medical Society of the State of New York

Quackery as Grounds for Disciplinary Action Against Physician

RECENTLY a case of interest came before the Courts in which a licensed physician was held guilty of unprofessional conduct in the treatment of patients in that his methods amounted to quackery.* The case is unusual in that most such conduct when it is the subject of judicial consideration involves unlicensed rather than licensed practitioners.

A certain Dr. S., regularly licensed to engage in the practice of medicine, had been warned, upon complaint by a former patient, by the State Board of Medical Examiners regarding the methods used by him in his practice. Subsequently that Board instituted proceedings against him to revoke his license. The formal charges against him were of improper and unprofessional diagnoses and of conducting himself in a manner unbecoming a person licensed to practice medicine, with resulting detriment to the public interest.

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* Board of Medical Examiners v. Schmidt 202 N. W.

clearly bald quackery, and so much an impression upon patients, that the testimony of three patients with whom he had had good luck would not have helped him."

Inquiries

YOUR Counsel recently received the following inquiry

"Dear Sir

"I have a case of a boy eighteen years old whose father refuses to give his consent for removal of tonsils and adenoids. The aunt who has cared for this boy for 5 years without help from the father wants to get a court order to have tonsils removed.

"Would I be protected if she received such an order? A prompt opinion in this case would be much appreciated."

"Sincerely yours,"

Your Counsel's reply was as follows

"Dear Dr

"I note that you have under your care a boy 18 years of age whose father refuses to consent to an operation for the removal of his tonsils and adenoids, and that the boy is being cared for by his aunt who wishes to obtain a court order requiring the performance of the operation.

"The exact problem which confronts you is one on which there is not a great deal of authority to be found in the cases that have come before the Appellate Courts of this state. The general rule is, of course, that the consent of the parents of a minor is necessary before an operation may be performed. In cases of emergency an operation may be performed without the consent of the parents. It seems clear that you could not safely proceed with the performance of an operation for the removal of tonsils and adenoids upon the theory that such operation was an emergency case for the welfare of minors.

"In certain cases for the welfare of minors the Courts have granted orders directing the performance of operative procedures. The case of *Matter of Vasko* arose a few years ago in Westchester County and was one which attracted considerable attention. In that case an infant suffering from a malignant condition, in the opinion of certain physicians required an operation to save the child's life. The Court there directed the performance of the operation in spite of the refusal of the parents to consent.

The order in the *Vasko* case was granted by the Children's Court of Westchester County, which court derives its powers from the Children's Court Act of the State of New York. I understand said act does not apply to the County of X. I presume that there is a Children's Court in your locality with similar powers to those possessed by the Children's Court of Westchester County. It is possible that such court, upon proper showing, might grant the order necessary to require the desired operation in spite of the refusal of the father.

You make the specific inquiry as to whether you would be protected if an order was made. If such order should be granted

I presume that it would be based in part at least upon an affidavit furnished by you to the Court pointing out the necessity for the operation. The order would be your authority to act but proceedings might be brought against you by the parent claiming that the statements made by you to the Court were either false or founded upon an improper diagnosis. I believe it would be essential for your protection that a consultant be brought in and that he, if he concurs in your findings, join with you in presenting to the Court reasons why the operation should be performed."

Yours very truly,"

Your Counsel recently received the following inquiry

"Dear Mr Brosnan

"I have a patient who is still in the child-bearing age, who has a cancer of the breast. It is my belief that rendering this patient sterile, by means of x-ray therapy, is very definitely indicated in an attempt to cure her cancer.

"The patient herself is quite willing that this should be done. Unfortunately, the patient although married, is not living with her husband, nor has she been for the past six years. She does not feel at all sure that her husband would consent to such a sterilizing procedure, and furthermore, for various personal reasons, she is very loathe to inform him of her condition, or to ask his cooperation in this matter. They are neither divorced nor legally separated.

I would greatly appreciate an expression of opinion from you as to the advisability of my going ahead with the sterilization without the husband's written consent.

"While I do not profess to know much of the legal rights of a husband in this sort of a case I feel that I would lay myself open to legal difficulties if I undertake this treatment without the full and written consent of both the husband and wife."

"Very truly yours "

Your Counsel's reply was as follows

"Dear Doctor

"Your letter does not state whether the parties are living apart by mutual agreement or whether the separation results from abandonment or otherwise, but it is clear that the parties have not been divorced or legally separated.

While it is true that under these circumstances a cogent argument could be made for the performance of the operation with only the wife's consent still I would not advise you to do the operation unless you have the written consent of both husband and wife detailing the nature of the operation and its results to the patient.

I would advise the patient that this operation which you believe to be indicated cannot be done by you with legal protection unless the written consent of the patient and her husband is procured. In other words, you should place the responsibility upon the patient to secure the written consent of her husband if she desires you to do this operation."

Yours very truly "

Medicolegal

LORENZ J. BROSNAN, ESQ

Counsel, Medical Society of the State of New York

Quackery as Grounds for Disciplinary Action Against Physician

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* *Board of Medical Examiners v. Schmidt* 292 N. W. 255

lesions of the placenta are briefly discussed in a chapter by Dr L M Hellman

This small volume is a welcome addition to the practitioner and student for the study of gross and microscopic pathologic lesions of the female genitalia.

SAMUEL A WOLFE

Symposium on the Synapse By Herbert S Gasser, Joseph Erlanger, Detlev W Bronk, Rafael Lorente De N6, and Alexander Forbes (Repr from *J Neurophysiol* 2 361-472 [1939]) Quarto, illustrated Springfield, Charles C Thomas, 1939 Paper

This symposium covers the latest data upon the physiology of the synapse, stressing the electrophysiologic aspects. The list of contributors includes some of the outstanding authorities in this field. The work should be of great interest to the neurophysiologist and to the neurologist who is interested in the fundamental problems underlying his specialty

ISRAEL S FREIDMAN

Protozoology By Richard R Kudo D Sc Second edition. Enlarged and completely rewritten edition of "Handbook of Protozoology" Octavo of 689 pages, illustrated Springfield, Charles C Thomas, 1939 Cloth, \$6 50

This book on protozoology gives a detailed description of the common and important genera of all groups of protozoa. It describes their morphology, physiology, variation and heredity, and other characteristics. This new edition is an adequate textbook, a laboratory manual, and comprehensive reference work on protozoa. The subject matter is clearly written, is profusely illustrated, and should make for easy reading. At the end of each chapter are carefully selected references. It is accurate and informative and should contribute much to the advancement of our knowledge of living things in general

EDWARD H NIDISH

Recent Advances in Neurology. By W Russell Brain, D M Fourth edition Octavo of 364 pages, illustrated Philadelphia, Blakiston Co, 1940 Cloth, \$5 00

Previous editions of this work were written by Brain and Strauss and have been useful adjuncts to standard texts in neurology. Dr Strauss has dropped out of the present edition, but the excellence of the work has not suffered. The book is of a handy size and is well printed on good paper. It is easy to handle and to read and encourages use.

There is much to be said for a book of this type. Bringing the subject of neurology up to date, it does more than merely present recent data and ideas. The important papers have been selected, digested, and brought into line with earlier knowledge. One thereby gains a clearer perspective of current advances in the field.

The chief fields of progress in this specialty have been satisfactorily surveyed and are up to the moment. There are excellent chapters on electroencephalography, the hypothalamus and the cerebellum. A helpful classification of brain tumors, newer modes of chemotherapy in infectious disease, and the new classification of demyelinating diseases are discussed.

This volume is heartily recommended for

everyone interested in neurology (and this is beginning to include almost every practicing physician). It is useful to the specialist and the general practitioner alike, treating the subjects amply and yet providing useful discussion of many commonplace problems.

ISRAEL S FREIDMAN

Medical Nursing By Edgar Hull, M D, Christine Wright, R N, and Ann B Eyl, B S Octavo of 588 pages, illustrated Philadelphia, F A Davis Co, 1940 Cloth

This book for the student nurse includes dietary management and surgical correlations. It is written by a physician, a nurse, and a dietitian includes a description of the principles of medicine and the causes, classifications, symptoms, and treatment of diseases of the various systems. After describing the basic principles of medical nursing, each disease is considered from the medical, nursing, and dietetic standpoint. Considerable description of the pathology of surgical correlation is included. There is a special section on nursing care of pneumonia reproduced with the permission of the New York State Department of Health. A great deal of information is presented making a suitable book for the best nursing schools.

W E MCCOLLOM

Diagnosis and Treatment of Head Injuries By Sidney W Gross, M D, and William Ehrlich, M D Octavo of 275 pages, illustrated New York, Paul B Hoeber, Inc., 1940 Cloth, \$5 00

The first 244 pages of this treatise are devoted to a brief anatomic and physiologic discussion of head injuries, and the remainder of the subject matter deals with various types of craniocerebral traumas and their management. The series of cases from which the discussion is drawn is rather small, but this is largely offset by an extensive bibliography covering all phases of head injuries. It must be remembered that this entire field is by no means standardized, and, therefore, abundant opportunities for controversy exist. Nevertheless the authors have set forth their subject clearly and have employed illustrations amply throughout. For general practitioners and surgeons alike this book represents an excellent introduction to the study of head trauma.

RICHARD GRIMES

Obstetrics and Gynecology By the Departmental Staff of the University of Chicago and Other Contributors. Edited by Fred L Adair M D Volumes I and II Octavo, illustrated Philadelphia, Lea & Febiger, 1940 Cloth, \$20 per set.

Dr Adair and his associates have produced a book that is designed as a complete and systematic treatise on obstetrics and gynecology for the practitioner and the student.

The two volumes are the result of the combined thought and judgment of over sixty physicians and biologists from the Department of Obstetrics and Gynecology of the University of Chicago, together with that of the staff of the Chicago Lying-In Hospital.

Principles are stressed rather than nonessential details, and the fields of obstetrics and gynecology are correlated to those of biology and medicine.

Books

Books for review should be sent to the Book Review Department at 1313 Bedford Avenue Brooklyn N Y. Acknowledgment of receipt will be made in these columns and deemed sufficient notification. Selection for review will be based on merit and the interest to our readers.

REVIEWED

Modern Medical Therapy in General Practice
Edited by David P Barr, M D Three volumes
Quarto of 3,661 pages, illustrated Baltimore,
Williams & Wilkins Co, 1940 Cloth, \$35 per
set

This work of more than one hundred consultants, edited by Dr Barr, has given the reviewer an enormous amount of pleasure and information. It is not only complete, accurate, and informative but it is presented in concise, readable, excellent English. These three volumes of about 1,200 pages, 3,781 in all, seem to include all diseased conditions that may happen to humans and the best treatments for these conditions. Bibliography is given at the end of each article. Because of the size and inclusiveness of the work, it is impossible for the reviewer to comment on any article individually—they are all complete. For any branch of general practice in medicine or any system of disease, one must refer personally to these volumes to realize how complete and how helpful this work may be. The editor has given us a masterpiece on the subject of Modern Medical Therapy in General Practice, and the publishers have made three large volumes clearly readable and comparatively light, with an excellent arrangement of type.

HENRY M. MOSSES

The Hypothalamus and Central Levels of Autonomic Function Volume XX of Research Publications of Association for Research in Nervous and Mental Disease. Proceedings of the Association December 20 and 21, 1939. Octavo of 980 pages, illustrated Baltimore, Williams & Wilkins Co, 1940 Cloth, \$10

Each succeeding publication of the Association for Research in Nervous and Mental Disease is an improvement on its predecessor. The twentieth volume lives up to this progress and deserves prominence because of the unusual promptness of its publication.

An important feature is the introduction of a uniform hypothalamic and hypophysial terminology. The book, consisting of 1,000 pages, is the product of the cooperative effort of forty-two investigators and clinicians. Three hundred and nineteen carefully selected illustrations and thirty-five tables add to its clarity and forcefulness. It is well organized into three distinct sections dealing with anatomy, physiology, and clinical manifestations. At the end of the volume is a complete bibliography, in addition to brief citations appended to each article. No special section can be singled out for praise. However, the first two sections dealing with the anatomy and physiology are bound to appeal to all students of neuropsychiatric disorders. It is an outstanding addition to the series and should be a "must" possession of those interested in disorders of the central nervous system.

HAROLD R. MERWARTH

Neoplastic Diseases A Treatise on Tumors
By James Ewing, M D Fourth edition Quarto
of 1,160 pages, illustrated Philadelphia, W B
Saunders Co, 1940 Cloth, \$14

The fourth edition of the American classic on tumors has been extensively revised to absorb the latest advances in the origin and structure of cancer.

The voluminous detail and excellent illustrations are exactly complete. The orderliness and simplicity of style, as well as the excellent clinical discussions that are contained in each section, make this book easily readable.

Extensive bibliographic lists are a valuable aid to the reader.

H MANDELBAUM

Gynecological and Obstetrical Pathology With Clinical and Endocrine Relations By Emil Novak, M D Octavo of 496 pages, illustrated Philadelphia, W B Saunders Co, 1940 Cloth

This excellent work thoroughly reviews the important pathologic lesions of the female genitalia. A brief introduction in hormonology is decidedly to the point and aids greatly in the understanding of the lesions of the endometrium. Under diseases of the vulva, granuloma venereum and lymphogranuloma venereum are clearly differentiated. The normal histology of the vagina is reviewed and also that of the cervix. Illustrations on chronic cervicitis especially emphasize the significance of epidermoid metaplasia. The microscopic classification of cancer of the cervix follows the lines presented by Martzloff. The value of biopsy, colposcopy, and the Schiller tests are clearly elucidated. The histology of the endometrium and its cyclic changes are well outlined. Endometrial hyperplasia in its aberrant microscopic forms and its clinical and pathologic resemblance to carcinoma of the body brings relief to the gynecologist often puzzled by varied interpretations of the same tissue. The section on fibroids and sarcoma of the uterus is adequate. In adenocarcinoma of the body, epidermoid metaplasia is emphasized. Tubal pregnancy is beautifully illustrated. The section on pelvic endometrosis is a most fair exposition of both proponents of the Sampson and the celomic metaplasia theories. Chronic lesions including syncytioma are excellently shown. The histology of the tubal mucosa is treated in detail. Clearly reviewed is the embryology and histology of the ovary. Corpus luteum formation and evolution are well illustrated. The neoplasms of the ovary include adequate discussion of the Brenner tumor, arrhenoblastoma, and granulosa cell neoplasms. The thecoma is considered as one type of granulosa cell tumor. The author's discussion of sarcoma of the ovary is interesting because the newer classification of ovarian neoplasms has almost eliminated this tumor type. Abnormal

It is difficult to agree with the author's inclusion of many syndromes among the manifestations of food allergy, e.g., acute suppurative cholangitis, hepatitis, or pancreatitis, chronic atrophic forms of hepatitis and pancreatitis.

The treatment of gastrointestinal allergy is very simple according to the author, who has successfully treated 2,000 patients. Neither skin tests nor elimination diets are used. On the basis of clinical experience, lists of allergic and anallergic foods are presented. Eggs, fish, meats, wheat products, e.g., macaroni and white bread, vegetables, e.g., the cabbage family and peas, are strangely enough included among the anallergic foods. The patient is started on a diet of anallergic foods and other foods are gradually added. If symptoms develop, the offending foods are eliminated. In addition, sedatives, like bromides or phenobarbital, atropine, and alkalies, have been helpful.

MAX HARTEN

An Atlas of the Commoner Skin Diseases With 120 Plates Reproduced by Direct Colour Photography from the Living Subject. By Henry C. G. Semon, M.A. Second edition. Quarto of 272 pages. Baltimore, Williams & Wilkins Co., 1940. Cloth, \$12.

In this, the second edition of his atlas of the commoner skin diseases, Dr. Semon has added much new material and brought the paragraphs on treatment completely up to date. The making of color illustrations is an art in itself, requiring great skill and enormous patience. And this is particularly true when the subjects of the illustrations are people suffering from some form of visible affliction. Dr. Moritz is to be congratulated for his masterly handling of the production of the plates which were made by the Finlay Colour process and printed in London from plates made by the Grout Engraving Co.

The average atlas of skin diseases usually suffers from one or more shortcomings. Too frequently, in colored plates, the colors are not accurate, also, in the selection of subjects, the authors neglect to show more than one stage of the same disease, and the general practitioner who relies on the plates to make his diagnoses fails to match his patient to the plate or a plate to his patient. Dr. Semon is to be congratulated in this respect, his atlas is replete with splendid plates, in many instances sufficient in number to depict every stage of the disease in question.

This is quite the best of the newer atlases in color dealing with the commoner diseases of the skin, and its addition to the library of the general practitioner should prove of distinct and authoritative assistance.

NATHAN THOMAS BEERS

Facts and Theories of Psychoanalysis By Ives Hendrick, M.D. Second edition. Octavo of 369 pages. New York, Alfred A. Knopf, 1939. Cloth \$3.00.

Sigmund Freud died at a ripe old age, yet his passing aroused profound sorrow in the hearts of all intelligent people, for his life work was one devoted entirely to unraveling the mysteries of the mind and of human behavior in general. His work is described under the heading of psychoanalysis. How very few people really have a basic knowledge of psychoanalysis.

The works of Freud, as well as those of his pupils, are published in so many different journals and in so many languages that it is difficult, particularly for the beginner, to gain an understanding of the subject. True, several books on the subject have been published from time to time, yet there has been need for a work that would give a coherent and systematic presentation of the facts and theories of psychoanalysis from the early days of Freud to those of his recent students.

The volume under discussion successfully gives an epitome of psychoanalysis. It is a survey of the whole science as it is understood by the specialist practicing it today. It deals with every aspect of the subject, its theories and practical application. It is written in a lucid and readable style, much simplified but not at the expense of basic fundamentals. A glossary defines technical terms in an understandable manner. There are also references for further reading of basic articles and books.

The book is highly recommended because of its thoroughness, brevity, and clarity. No physician can afford to be without it. All intelligent laymen will find it a most illuminating and instructive book for their library. Teachers and educators will find the book very helpful in their daily work.

IRVING J. SANDS

Savill's System of Clinical Medicine Dealing with the Diagnosis, Prognosis, and Treatment of Disease for Students and Practitioners. Edited by Agnes Savill, M.D., and E. C. Warner, M.D. Eleventh edition. Octavo of 1,141 pages, illustrated. Baltimore, William Wood & Co., 1939. Cloth, \$9.00.

The eleventh edition of this work follows the plan of previous editions in presenting disease from the clinical point of view. Diseases are described as they appear in the patient and discussed in this way. Clear, accurate, true descriptions are used and much can be learned from the text. The eleventh edition has added many new advances of medical practice and is up to date. As a reference book this volume will well repay a careful study.

HENRY M. MOSES

Diverticula and Diverticulitis of the Intestine Their pathology, diagnosis, and treatment. By Harold C. Edwards, F.R.C.S. Octavo of 335 pages, illustrated. Baltimore, Williams & Wilkins Co., 1939. Cloth, \$8.00.

A complete study of diverticula of the gastrointestinal tract, this book is interestingly written and profusely illustrated with plates, some of them colored. It is in substance the Jacksonian Prize Essay of the Royal College of Surgeons brought up to date.

A careful analysis of the subject includes a study of the incidence, morbid anatomy, symptomatology, and the radiologic aspect of diverticula in various parts of the alimentary canal. Meckel's diverticulum is discussed scientifically and a hypothesis is suggested explaining its origin.

The theory is developed that acquired diverticuli emerge through weakened spots in the muscular coat—namely, where the vessels enter. This is substantiated in the colon by the fact

Factors governing important operative procedures are thoroughly presented with their indications and contraindications. Details of operative technic are not stressed.

This work, representing as it does the combined thought and practice of such an able group of teachers, is an outstanding textbook.

It will be a valuable aid to all those who are interested in and who teach this subject.

WM SIDNEY SMITH

The New International Clinics. Original Contributions, Clinics, and Evaluated Reviews of Current Advances in the Medical Arts. Edited by George M. Piersol, M.D. Volume II, New Series Three. Octavo of 365 pages, illustrated. Philadelphia, J. B. Lippincott Co., 1940. Cloth, \$3.00.

This issue of *International Clinics* completes the excellent review of jaundice by Held and Goldbloom. A valuable sign of left heart failure is described by Digilio and Pescatore, and the usual comprehensive review is that by Haymaker on the hypothalamus. The last is over 100 pages long and in itself is worth the price of the entire volume.

MILTON PLOTZ

Handbook of Orthopaedic Surgery. By Alfred R. Shands, Jr., M.D. Second edition. Octavo of 567 pages, illustrated. St. Louis, C. V. Mosby Co., 1940. Cloth, \$4.25.

For purposes of teaching the fundamentals of orthopedic surgery to the medical student and general practitioner, this text is ideal in its substance and arrangement. The orthopedist will probably find the subject matter too brief, but this difficulty is offset by the extensive bibliography.

HENRY P. LANGE

Introduction to Medicine. By Don C. Sutton, M.D. Octavo of 642 pages, illustrated. St. Louis, C. V. Mosby Co., 1940. Cloth.

This textbook for schools of nursing provides the nurse with a considerable amount of information adapted to her standpoint.

Part one is a survey of the background of medicine including chapters on social service, the mental reaction of the patient to disease, functional nervous diseases, history, physical examinations, laboratory tests, and numerous others.

Part two is a description of all ordinary diseases, considering briefly symptoms, diagnosis and treatment. Treatment stresses the nurse's relations to the care of the patient.

No fault can be found with the account furnished by the well-known author, who has successfully accomplished the purpose of the book.

W. E. McCOLLUM

A Text-Book of Psychiatry for Students and Practitioners. By D. K. Henderson, M.D., and R. D. Gillespie, M.D. Fifth edition. Octavo of 660 pages. New York, Oxford University Press, 1940. Cloth, \$6.00.

This edition discusses some new material that has been put out in various psychiatric circles. Particular attention is given to the shock treatment and to prognosis. Recent research investigations, as carried out by Gjessing in connection with the relation of nitrogen levels in stupor

states, are discussed. Consideration of the psychopathic personalities apart from the group of mental defect seems to be an advantage and in line with present-day psychiatric tendencies. Heredity and treatment of nervous children are further elaborated upon in this edition. The book, as thus rounded out and brought up-to-date, continues to be one of the outstanding texts on psychiatry and is now, as in the past, highly recommended to both students and practitioners.

ARTHUR E. SOPER

Demonstrations of Physical Signs in Clinical Surgery. By Hamilton Bailey, F.R.C.S. Seventh edition. Octavo of 310 pages, illustrated. Baltimore, Williams & Wilkins Co., 1940. Cloth, \$6.50.

This book is as essential to the undergraduate as a primer to the child. It will parallel and broaden the best of courses in physical examination that our universities give. To the graduate in medicine, it will give aid in many an obscure case and help to develop the science of physical diagnosis through observation and examination which at the present day have been unjustifiably neglected. That the work serves a useful purpose is indicated by the appearance of seven editions in the thirteen years since it was first published in 1927.

GEORGE WEBB

Ophthalmology. By Burton Chance, M.D. 16 mo. of 240 pages, illustrated. New York, Paul B. Hoeber, 1939. Cloth, \$2.00. (*Clio Medica* Series, Volume XXI.)

The firm of Harper & Bros. has put out a series of primers on medical history under the title of *Clio Medica*. With the completion of the series, practically every phase of medical history will have been covered. The editor-in-charge made an excellent selection when he asked Dr. Chance to prepare this book which covers the progress of ophthalmology from early times, as a part of surgery or an avocation of astronomers, to its conversion into a science by Helmholtz's ophthalmoscope, ready for the coming of antiseptic surgery and the lessons of the microscopist. We commend this book to all interested and suggest that, in addition, each prospective reader peruse another of Dr. Chance's historical articles found in the thirteenth volume of the *Archives of Ophthalmology*, page 348, "The Coming of the Ophthalmoscope into England."

R. I. LLOYD

Diseases of the Digestive System and Food Allergy. By Josef S. Smul, M.D. Octavo of 219 pages. New York, Medical Library Company, 1940. Cloth, \$3.50.

In more or less outline form, the writer discusses diseases of the digestive system and gastrointestinal allergy within a small book of 230 pages.

According to the author only thirty of the hundred or so diseases described in standard textbooks on gastrointestinal disease are clear entities. The other seventy are all manifestations of food allergy. The author introduces new nomenclature to describe these manifestations of food allergy, e.g., alimentallergy, pancreallergy, hepatallergy, etc.

It is difficult to agree with the author's inclusion of many syndromes among the manifestations of food allergy, e.g., acute suppurative cholangitis, hepatitis or pancreatitis, chronic atrophic forms of hepatitis and pancreatitis.

The treatment of gastrointestinal allergy is very simple according to the author, who has successfully treated 2,000 patients. Neither skin tests nor elimination diets are used. On the basis of clinical experience, lists of allergic and anallergic foods are presented. Eggs, fish, meats, wheat products, e.g., macaroni and white bread, vegetables, e.g., the cabbage family and peas are strangely enough included among the anallergic foods. The patient is started on a diet of anallergic foods and other foods are gradually added. If symptoms develop, the offending foods are eliminated. In addition sedatives, like bromides or phenobarbital, atropine, and alkalies, have been helpful.

MAX HARTEN

An Atlas of the Commoner Skin Diseases
With 120 Plates Reproduced by Direct Colour Photography from the Living Subject. By Henry C G Semon, M A. Second edition. Quarto of 272 pages. Baltimore, Williams & Wilkins Co., 1940. Cloth, \$12.

In this, the second edition of his atlas of the commoner skin diseases, Dr Semon has added much new material and brought the paragraphs on treatment completely up to date. The making of color illustrations is an art in itself, requiring great skill and enormous patience. And this is particularly true when the subjects of the illustrations are people suffering from some form of visible affliction. Dr Moritz is to be congratulated for his masterly handling of the production of the plates which were made by the Finlay Colour process and printed in London from plates made by the Grout Engraving Co.

The average atlas of skin diseases usually suffers from one or more shortcomings. Too frequently, in colored plates the colors are not accurate, also, in the selection of subjects, the authors neglect to show more than one stage of the same disease and the general practitioner who relies on the plates to make his diagnoses fails to match his patient to the plate or a plate to his patient. Dr Semon is to be congratulated in this respect, his atlas is replete with splendid plates in many instances sufficient in number to depict every stage of the disease in question.

This is quite the best of the newer atlases in color dealing with the commoner diseases of the skin and its addition to the library of the general practitioner should prove of distinct and authoritative assistance.

NATHAN THOMAS BEERS

Facts and Theories of Psychoanalysis. By Ives Hendrick M D. Second edition. Octavo of 369 pages. New York, Alfred A Knopf, 1939. Cloth \$3.00.

Sigmund Freud died at a ripe old age, yet his passing aroused profound sorrow in the hearts of all intelligent people, for his life work was one devoted entirely to unraveling the mysteries of the mind and of human behavior in general. His work is described under the heading of psychoanalysis. How very few people really have a basic knowledge of psychoanalysis.

The works of Freud as well as those of his pupils, are published in so many different journals and in so many languages that it is difficult, particularly for the beginner, to gain an understanding of the subject. True, several books on the subject have been published from time to time, yet there has been need for a work that would give a coherent and systematic presentation of the facts and theories of psychoanalysis from the early days of Freud to those of his recent students.

The volume under discussion successfully gives an epitome of psychoanalysis. It is a survey of the whole science as it is understood by the specialist practicing it today. It deals with every aspect of the subject, its theories and practical application. It is written in a lucid and readable style, much simplified but not at the expense of basic fundamentals. A glossary defines technical terms in an understandable manner. There are also references for further reading of basic articles and books.

The book is highly recommended because of its thoroughness, brevity, and clarity. No physician can afford to be without it. All intelligent laymen will find it a most illuminating and instructive book for their library. Teachers and educators will find the book very helpful in their daily work.

IRVING J SANDS

Savill's System of Clinical Medicine. Dealing with the Diagnosis Prognosis and Treatment of Disease for Students and Practitioners. Edited by Agnes Savill M D and E C Warner, M D. Eleventh edition. Octavo of 1,141 pages illustrated. Baltimore. William Wood & Co., 1939. Cloth, \$9.00.

The eleventh edition of this work follows the plan of previous editions in presenting disease from the clinical point of view. Diseases are described as they appear in the patient and discussed in this way. Clear, accurate, true descriptions are used and much can be learned from the text. The eleventh edition has added many new advances of medical practice and is up to date. As a reference book this volume will well repay a careful study.

HENRY M MOSES

Diverticula and Diverticulitis of the Intestine. Their pathology, diagnosis, and treatment. By Harold C Edwards F R C S. Octavo of 335 pages, illustrated. Baltimore, Williams & Wilkins Co. 1939. Cloth, \$8.00.

A complete study of diverticula of the gastrointestinal tract, this book is interestingly written and profusely illustrated with plates some of them colored. It is in substance the Jacksonian Prize Essay of the Royal College of Surgeons brought up to date.

A careful analysis of the subject includes a study of the incidence, morbid anatomy, symptomatology, and the radiologic aspect of diverticula in various parts of the alimentary canal and a hypothesis is suggested scientifically, origin.

The theory is developed that acquired diverticuli emerge through weakened spots in the muscular coat—namely, where the vessels enter. This is substantiated in the colon by the fact

that diverticula occur on the mesenteric side of the anterior and posterolateral taenia coli, where the largest of the vessels enter the wall of the bowel

This book assembles the available knowledge regarding diverticula, and the facts are carefully evaluated in their relation to diagnosis and treatment

HENRY F KRAMER

Tuberculosis and Social Conditions in England with Special Reference to Young Adults A Statistical Study By P D'Arcy Hart and G Payling Wright. Octavo of 165 pages London, National Association for the Prevention of Tuberculosis, 1939 Paper, 3 shillings

This is a report of the studies made by the authors on the trends of crude and age specific death rates in England and Wales between the years 1850 and 1936

Attention is drawn to the well-known fact that while during the period under consideration the crude death rate followed a definite and continued downward trend, when age specific death rates were considered, definite periods of retardation in this downward trend were noted with respect to the age group 5 to 25 years and affecting both males and females in this age group The authors are able to show a significant correlation between these periods of retardation in the decline of death rates and certain social changes, such as the course of the standard of living, changes in housing conditions, and the variations of employment of young women in industry

The hypothesis is advanced that these social changes exerted a selective effect upon tuberculosis among young adults who are considered to be particularly sensitive as regards this disease, because of conditions to which they are subjected during years of adolescence and early adult life.

F L MOORE

The Treatment of Rheumatism in General Practice By W S C Copeman, M D Third edition Octavo of 276 pages Baltimore, Williams & Wilkins Co., 1939 Cloth, \$4.00

This book, as its title intimates, is a treatise on the therapeutics of rheumatic diseases ("rheumatic" in a generic sense rather than as rheumatic fever) The work is intensely practical stressing as it does, in the usual European manner, treatment rather than theoretic considerations Rheumatic fever, neuritis, sciatica, gout, rheumatoid arthritis, osteo-arthritis, and forms of spondylitis are covered in turn Part three embraces about 150 pages of therapy, covering medicinal, vaccine, physical, endocrine, actino, orthopedic, and spa treatment.

Although there are many minor points to which the reviewer cannot subscribe, the book as a whole is an excellent one, giving a broad as well as detailed consideration of the subject

GEORGE E ANDERSON

Unto the Fourth Generation Gonorrhea and Syphilis What the Layman Should Know By Irving Simons, M D Octavo of 243 pages, illustrated New York, E P Dutton & Co., 1940 Cloth, \$2.50

The subtitle to this ominous heading is "Gonorrhea and Syphilis—What the Layman Should Know"

As such, the book will be a profitable addition to the already numerous publications for laymen The two main chapters, gonorrhea and syphilis, are readable, and their contents are easily understood by the average reader The author has wisely refrained from giving an outline of the therapeutic efforts now in vogue but has limited himself to the clinical history of the two diseases

There is also a third chapter containing odds and ends Among these is a plea by the author that all public clinics for the treatment of venereal diseases be abolished and that all these cases be treated by the private physician There is also a chapter on the nonvenereal transmission of syphilis and gonorrhea and a full discussion of the laboratory methods used in the diagnosis of these two diseases

There is an adequate glossary of medical terms and a good index

H L WEHRBEIN

The Vitamins A Symposium Arranged Under the Auspices of the Council on Pharmacy and Chemistry and the Council on Foods of the American Medical Association Octavo of 637 pages, illustrated Chicago, American Medical Association, 1939 Cloth, \$1.50

So much information has become available about the vitamins that it is difficult even for experts to keep up with the literature. The present volume is a welcome compendium of authoritative information about these accessory food factors There are discussions of the chemistry, physiology, pathology, pharmacology and therapeutics, methods of assay, food sources, and human requirements of each of the important vitamins The volume is composed of thirty-one chapters written by experts and is published under the auspices of the Council on Pharmacy and Chemistry and the Council on Foods of the American Medical Association

This book should prove to be an indispensable volume for the library of every physician.

Post-Mortem Appearances By Joan M Ross, M D Fourth edition 16 mo of 276 pages New York, Oxford University Press 1939 Cloth, \$2.50

During the past fifteen years this pocket-sized manual has usefully served many students as well as practitioners infrequently required to perform necropsies. Mainly, it is a compendium of the chief gross pathologic changes occurring in the more common diseases, handy statistical data for reference, and other practical features related to postmortem room It is slightly larger than any of the previous editions, contains a new section dealing with neonatal deaths and still births, and its British source is much less noticeable For its purpose, the volume is alone in its field

IRVING M DERBY

A Mirror for Surgeons Selected Readings in Surgery By Sir D'Arcy Power, K B E, F R C S Octavo of 230 pages Boston, Little, Brown & Co., 1939 Cloth, \$2.00

The author of this book, among his many cultural and professional honors, long held the office of Honorary Librarian of the Royal College of Surgeons and has made rich contributions to surgical biography This book is a collection of stud

ies of the contributions of twenty-two great surgeons—eighteen Englishmen, one Frenchman, Ambrose Paré, and three Americans, W S Halsted, Henry J Bigelow, and J Marion Sims. The first Englishman quoted is Master John Arden, who lived in the fourteenth century and the last is Sir William Macewen.

The essential purpose of these studies is a series of quotations from original dated articles. All the references are not strictly surgical, as some show the cultural and social interests of the writer discussed. Those of us who associate the name of Sims with gynecologic technic will be interested to read of his ability as a general surgeon, as shown in his description of the operation for the removal of the superior maxilla for malignant disease of the upper jaw. Such collections of classical contributions to surgery as are found in this book are of more than mere academic interest—they represent a story of the advancement of surgery from an art to a science.

JOSEPH RAPHAEL

Roentgen Technique By Clyde McNeill, M D. Octavo of 315 pages illustrated. Springfield, Charles C Thomas, 1939. Cloth, \$5 00.

This is a very satisfactory volume pertaining to radiographic technic. It is particularly valuable in the lucid discussion of the more special procedures to wit tomography, kymography, bronchography, myelography, gynecologic and obstetric roentgenography, etc. Exposure tables and apparatus are wisely given limited but sufficient space for this type of book. Unfortunately several of the illustrations indicate a lack of proper immobilization of the part, and in others the patient appears strained and the anatomic part under examination is not sufficiently close to the film holder. Attention to such details is essential for proper radiography.

RICHARD A. RENDICH

Sex and Life. Forty Years of Biological and Medical Experiments By Eugen Stenach, M D. Octavo of 252 pages, illustrated. New York, The Viking Press 1940. Cloth, \$3 75.

The book is written for laymen, "particularly those in the middle and late years who will learn from this book the startling possibilities of adding years of mental and physical vigor to life." The quotation is from the blurb.

It is a well-written autobiographic report of Stenach's main work on the problem of rejuvenation. Vasoligation is discussed at length and with excessive enthusiasm. The newer findings in the use of synthetic hormones are also described.

There can be no question that the book will make interesting reading for the layman as well as for the professional man. The attached bibliographic index of Stenach's publications begins with the year 1884. What better argument could there be as to the sustained mental vigor of the author?

H L WEHRBEIN

A Manual for Diabetic Patients. By W D Sansum, M D, Alfred E Koehler, Ph D, and Ruth Bowden, B S. Octavo of 227 pages, illustrated. New York, Macmillan Co., 1939. Cloth \$3.25.

Sansum's *Manual* is technically accurate and

up to date in its information. However, there is some question in the reviewer's mind about whether the average lay person will have the scientific background to appreciate the valuable information in the manual. Nurses will probably get the most out of a book of this type.

In constructing and suggesting diets, physicians and dietitians should be aware of the economic factors that have arisen in the past decade. There are very many patients, indeed, who can afford only clinic care. The cost of the diet recommended for the diabetic is an important factor. The book takes no special notice of this, and continues to recommend such relatively expensive foods as cream, etc. Perfectly adequate diabetic diets can be constructed using only low cost, nutritious foods. It is to be hoped that Dr Sansum will add a chapter of this sort to an otherwise valuable book.

ETHEL PLOTZ BERMAN

Manual of Urology By R. M LeComte, M D. Second edition. Octavo of 295 pages illustrated. Baltimore, Williams & Wilkins Co., 1939. Cloth, \$4 00.

In a manual of 295 pages with complete bibliography the author presents a comprehensive survey of the fundamentals of urology which is of inestimable value to the medical student and general practitioner. The book is divided into eleven chapters. The first three are devoted to symptomatology and methods of examination and treatment of genitourinary diseases.

The eight remaining chapters are devoted to most common diseases of the genitourinary tract, describing in concise manner the underlying etiology, pathology, symptomatology, differential diagnosis, prognosis, and most acceptable form of treatment. The operative procedures are named but are not described.

In this edition sections on the neuromuscular physiology and pathology of the bladder and a chapter on impotence and sterility have been added. The manual is concise and well organized. It offers a welcome addition to the subject of urology especially to the medical student and general practitioner for whom it was originally intended.

PHILIP GOLDFADER

Clinical Diagnosis by Laboratory Methods. A Working Manual of Clinical Pathology. By James C Todd, M D, and Arthur H Sanford, M D. Ninth edition. Octavo of 841 pages, illustrated. Philadelphia, W B Saunders Co., 1939. Cloth, \$8 00.

This book is comprised of twelve chapters each one devoted to the laboratory analysis of such subjects as blood, urine, feces, sputum, etc. The subject matter is quite comprehensive, and the various methods used are as up to date and research.

In their descriptions of tests, one finds many that have been omitted in some manuals and textbooks. This gives a broader view and aids in obtaining a clearer picture on technic.

All of the chapters are inclusive and we especially feel that the chapter on animal parasites is excellent in that it gives a good deal in a simple and informative manner. The plates

accompanying these descriptions are equally as good

The reviewer finds that there is much valuable information from which the reader can derive many benefits

MORRIS ANT

Mind Explorers By John K. Winkler, and Walter Bromberg, M D Octavo of 378 pages New York, Reynal & Hitchcock, 1939 Cloth, \$3 00

This book relates the story of various individuals who played a part in disclosing the workings of the mind and its relationship to human behavior It begins with the life of Gall, who developed the art of phrenology There are interesting chapters on Charcot and Galton Among the moderns are William James and Stanley Hall The authors stress the influence of Cattell who was one of the first founders of educational psychology in America and whose influence caused a change in our methods of teaching children to read The final chapters are devoted to Freud and mental hygiene

It is written in a light vein and makes for interesting light reading for both the layman and the doctor

STANLEY S LAMM

Pictorial Midwifery An Atlas of Midwifery for Pupil Midwives By Sir Comyns Berkeley, M D Third edition Octavo of 166 pages, illustrated Baltimore, Williams & Wilkins Co, 1939 Cloth, \$3 00

As the title indicates, the author intends this volume as a textbook for midwives In this third edition he has revised the text as well as the illustrations The value of the book is in the excellent illustrations which are explained in clear and concise descriptive text The illustrations cover the anatomy of the pelvic bones, muscles, organs, placenta, the fetal skull in relation to the pelvis, and fetal circulation in color

In section two, signs of pregnancy and some of the common complications of pregnancy are illustrated and plainly described The section devoted to labor takes up presentations and mechanism in the same illustrative and descriptive manner

For midwives and for those who have not had a full obstetric course of teaching, the illustrations and the descriptive text give a clear understanding of the subject.

This volume is, as the author intended, an excellent guide for midwives and also may be of value to nurses

WM SIDNEY SMITH

Essentials of Fevers. By Gerald E Breen, M D Duodecimo of 274 pages, illustrated Baltimore, Williams & Wilkins Co, 1939 Cloth, \$3 00

The author has prepared this book on fevers with the needs of the young practitioner and student in mind Theoretic discussions are purposely brief, but they are none the less informative. Emphasis is placed on the practical aspects of the diseases, particularly on their diagnosis and therapy The methods of prophylaxis and treatment that the author recommends are quite in accord with current practice in this country and are in every way up to date.

The volume contains twelve sections, the first five of which cover the following subjects: general features of infections, results of infections, disease and immunity, elementary epidemiology, and examination and treatment of fever patients The fifth section, a particularly good one, is devoted to streptococcal infections including erysipelas and scarlet and puerperal fever The next section contains an excellent description of diphtheria In the seventh section the author deals with enteric (typhoid) bacillary dysentery and gastroenteritis The subsequent two sections take up variola, vaccinia, varicella, cerebrosplinal fever, and poliomyelitis The tenth and eleventh sections contain descriptions of measles, whooping cough, rubella, and mumps The final section covers various miscellaneous subjects including a table of incubation and segregation periods and a discussion of infectious diseases and the law

This is an interesting and helpful book for the student and practitioner While practical, it is sufficiently scientific, and the opinions expressed and methods of therapy advised are obviously based on careful study and extensive observation of these acute infectious fevers

JOSEPH C REGAN

English, German, French, Italian, Spanish Medical Vocabulary and Phrases. By Joseph S F Marie Oblong 16 mo of 368 pages Philadelphia, P Blakiston's Son & Co, 1939 Cloth, \$3 00

This book lists medical words in English, German, French, Italian, and Spanish In addition to scientific words, there are names of articles of common use in the hospital and sickroom Also, phrases used frequently by the doctor, nurse, and patient are presented in the form of questions and answers This handy vocabulary really takes the place of four separate dictionaries in the above-mentioned foreign languages

One can use the vocabulary, however, only in translating from English to one of the other languages The usefulness of the book could be enhanced by the inclusion of an Index listing the words alphabetically, so that translations could be made from the foreign languages to English

CHARLES SOLOMON

William B Wherry Bacteriologist. By Martin Fischer Quarto of 293 pages, illustrated. Springfield, Charles C Thomas, 1938 Cloth, \$4 00

The early life, maturation, and works of a prominently great individual is frequently unusual and always of interest When such a biography interweaves itself with bacteriologic history, the volume is impressive to anyone associated with that science This volume contains a wealth of intimate and factual data concerning scientific members of our previous generation that accomplished much in bacteriologic and medical advancement and continues with inclusion of personal data and feats of the present days From 1874 into 1936, an outstanding bacteriologist, educator, and leader has enjoyed life and his labors Beautifully bound and printed, excellently written by one of his earnest friends, the volume is a worthy tribute to the man and an inspirational record for American science and medicine

IRVING M DERRY

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Editorial

The Blackguards

In his speech before the Fifth District Branch, Dr James M Flynn, president of the Medical Society of the State of New York, flayed verbally those few physicians in the state who "cut corners," as he termed the unethical practices to which some resort. He pointed out that every community has a few physicians who are not honest with themselves, their fellow practitioners, or with their patients. Yet it is those few men who give the profession a bad name. It is they whose questionable acts are cited as examples, who provide arguments for the advocates of state medicine and provoke public criticism and censure. The public does not discriminate and falls into the error of ascribing to the many the faults of the few.

It appears to us that Dr Flynn's point is well taken and, important at any time, is doubly so now. Business and the professions have always been menaced by a small number of racketeers, men of antisocial nature, human vultures paying only lip service to the law or using it to gain their selfish ends. Cynically, they thrive on the misfortunes of others and exploit the poor and the ignorant. In times of stress and unrest, danger or calamity they thrive on the preoccupation of their professional brethren with urgent affairs and prey upon a public harassed by fright and heavy cares.

They are the hatchet men, the exactors of big fees, the bill padders, the advocates of unnecessary treatment, the scoundrels of the scalpel who do the unnecessary operations, the relief rascals, the pusillanimous pill pushers—to name a few. Sordid and conscienceless as they are, they are so small in number in the medical profession as to be conspicuous. But as a rotten apple will cause the whole barrel to spoil, so these human cankerworms can damage the reputation of an entire profession.

We could wish that sufficient means and authority existed within the profession itself to deal adequately with such public menaces. Unfortunately, the disciplinary power of the profession is limited to censure and expulsion from county and state society membership upon sufficient evidence and proof of guilt. The best safeguard is still the rigid adherence to that code of ethics which is discipline beyond the law.

Hobson's Choice

"Is American medicine really prepared to face the serious revolutionary dilemma that confronts the Nation? On the one hand, the menace of foreign totalitarianism, on the other, the menace of domestic collectivism."

This knotty question is hurled at the profession in the October issue of our restless contemporary, the *Westchester Medical Bulletin*, which is filled, like the Elephant's Child, with "satiabable" curiosity and as usual wants to know what the crocodile has for dinner. At the moment, the *Bulletin* is concerned about military preparedness.

"We are now in process of readjusting the national thought and activities to a military economy. We find ourselves, now, in the act of preparing this Nation for something. For what? War or defense? It is anybody's guess, but in either case it is weighted with serious consequences for the institution of medicine."

The *Bulletin* sees medicine engulfed and regimented and, we confess, with some reason.

"If we are preparing for war, then certainly it must be for total war, wherefore an interim dictatorship is as certain as death and taxes, with suspension of laws, general conscription, and government by decree. Where does medicine as we know it here fit into that picture? What has happened to it in those countries that have prepared for and engaged in total war? Nobody knows. The institution of medicine here is intimately enmeshed forever in the social, the industrial, and the educational life of the Nation. A total war economy, however, is a blistering prelude to national bankruptcy, a perverter of scientific research, and the hellhag of humanitarianism. Is it for this we prepare? Here is one horn of the dilemma. Have you fully weighed its effect on medical education? On medical practice? On medical organization? On the institution of medicine and the practitioner? How say you, Gentlemen?"

'But perhaps we prepare for defense. What kind of defense? Partial? Total? Defense of what? A way of life? What way of life? The American way of life? What is that? Something concrete or just loose talk? Is it the land in which we live only, or the manner in which we live in it? Or both? How say you, Gentlemen?"

"This is the other horn of the dilemma. Is medicine ready to face the fact that preparation for defense means probably for total defense? What does total defense signify? And how has American medicine and the Nation already been 'prepared' to meet it? Let

us look at the record Dr Franklin said at the close of the eighteenth century when asked what kind of government we had 'A republic—if you can keep it' Have we kept it? A republic is a state in which the sovereign power resides in the electorate—if they can keep it Can the electorate keep that sovereign power in a *continuing war economy* which a condition of actual, not putative, national defense will certainly necessitate? Think before you answer, read the question twice. Then consult the record

"Seven years ago in an era of comparative world peace but of profound economic depression, the electorate through its Congressional representatives abdicated its sovereign powers Yet we had no war economy at the time—merely terror Immediately, acts strange indeed to democratic concepts occurred depreciation of the currency, N R. A , A A. A , debt beyond the budget, supreme court packing, senatorial purges, government by executive order 'A republic—if you can keep it,' said Franklin

"On June 10, 1937, Senator J Hamilton Lewis (Democrat, Illinois) appeared before the American Medical Association at Atlantic City to serve notice on the medical profession (We know nothing of a patient, don't recognize its existence It is your creation. We recognize an instrument called citizen who is essential to the welfare of government) that the Administration was not in 'agreement' with organized medicine in the matter of medical care for the American people "

The citizen in 1937 became an instrument essential to the welfare of government This date marks an important period in the life of the Nation

'In December, 1937, Senator Pat McCarran (Democrat, Nevada) requested the acting Comptroller General of the United States to inform him as to the authority of law under which public funds had been diverted from the H O L C for the purpose of establishing a social health organization among the employees of the corporation. Mr R. N Elliott, acting comptroller, replied in part ' Accordingly it must be concluded in the instant matter that the disbursements and other costs were made and incurred without authority of law "

"In November, 1938, the Constitution of the State of New York was amended to permit the establishment of government-controlled compulsory health insurance by statute at any time."

As a matter of fact, a program of state-operated compulsory health insurance awaits only the outcome of the present experiments in nonprofit medical expense indemnity insurance If these repeat the history of the Wisconsin[†] experiments, there is little balm in Gilead

"In January, 1939, the Wagner National Health Program' Bill (S 1620) was introduced in the United States Senate as part of the Administration's social security program

"September 1, 1939, Germany invaded Poland

"September 3, 1939, England and France declared war on Germany

'In July, 1940, the *Saturday Evening Post*** said editorially, in-

* J A M. A. 112 No 1 59 (Jan. 7) 1939

† Minnesota Medicine 661-662 (Sept.) 1940

** *Saturday Evening Post* July 13 1940 p 26

credible as this may seem 'While the Senate was debating, with intent to kill it, a resolution which would have conferred upon the President of the United States certain extraordinary powers, the President seized those powers'

"In August, 1940, the Russell-Overton amendment to the Burke-Wadsworth Military Selective Service Bill was introduced in the Senate which purported to conscript and seize industry or any other 'facility' not in 'agreement' with the Administration.

"This is the record In it may be read the manner in which the nation and American medicine have been 'prepared' during seven years of emergencies and alarms to accept the idea of a domestic totalitarianism Piecemeal, the democratic structure of republican government here has been tragically invaded until the matter has become so grave that we are faced with the dilemma of having to accept, in order to resist its threat, the very totalitarianism against which we assume now to prepare a defense.

"'A republic—if you can keep it' Can it ever be regained? Can the present structure of American medicine survive its fall? How say you, Gentlemen?"

Coals to Newcastle

We heartily congratulate the editors of the *Connecticut State Medical Journal* on their October issue devoted to Military Medicine It is timely, the articles are well diversified covering much that was not available to this JOURNAL on July 15 of this year when, in the early days of the defense program, we published the first of the special issues devoted to this subject The issue is so well done as to arouse our professional envy, almost we could wish that our lines had been cast in the pleasant precincts of Hartford or New Haven Almost, but not quite

Our neighbor chides us editorially—in kindly fashion—for having ventured, in our military medicine issue, to raise some questions concerning the effect of peacetime mobilization on physicians' insurance policies and programs "*The New York State Journal of Medicine*, in an editorial entitled 'Protecting Insurance in Wartime,' makes a venturesome expedition into a field in which more authoritative opinion may be obtained here in Connecticut" One gathers the impression that the *Connecticut State Medical Journal* feels that we of New York have been carrying coals to Newcastle in the matter of insurance, that the voice of experience and authority should emanate from Hartford, and that—in good time—it will

This gentle rebuke to our frowardness brings the rose to our damask cheek, we meant no real harm by our little insurance venture and certainly did not anticipate, in so venturing, that we would be treading on posted land, we merely undertook to enlighten a correspondent in our fumbling way and without giving offense Dispiritedly perusing the *Connecticut State Medical Journal* further, however, we felt better Reading of the recent action of the New

York City Board of Health in the matter of Approved milk, we felt ourselves, as it were, in familiar surroundings

N Y S J M, p 1348

"On June 11, 1940, after considerable study by the New York City Health Department and its consultants and several months of hearings with producers, milk distributors, and representatives of the consuming public, the Board of Health adopted amendments to the City's Sanitary Code. The standards defined for Approved milk are better than those required formerly for Grade B and in some respects comparable to those required formerly for Grade A. The new law affects chiefly the economics of milk production and marketing "

C S M J, p 628

On July 11, 1940, after considerable study by the New York City Health Department and its consultants and several months of hearings with producers, milk distributors, and representatives of the consuming public, the Board of Health adopted amendments to the City's Sanitary Code. The standards defined for "Approved Milk" are better than those required formerly for Grade B and in some respects comparable to those required formerly for Grade A. The new law affects chiefly the economics of milk production and marketing and, it is hoped, will not discourage sanitary production.

Sure enough, our very words stood forth almost exactly as we had written them in our September 15 issue. In what used to be France we have heard this gesture referred to as the "amende honorable," is it not? We accept it as such, even in view of the printer's lamentable error in eliminating the quotes and changing the date, and in spite of certain original effects in spelling

Correspondence

To the Editor

I wish to take exception at your using the *JOURNAL* on behalf of one presidential candidate. Politics and Medicine do not mix well. Regardless of your personal opinions, I sincerely believe that you should carefully avoid definite statements in favor of one or the other candidate. There are far more important issues at stake than the much debated question of "socialized" medicine. The next four years, probably the most critical in the history of our country, doubtlessly will sidetrack this entire problem.

Socialized Medicine has been made an issue by the doctors and not by the present administration. By stubbornly refusing to recognize changes in the economical structure of the American people the doctors themselves have invited certain political groups to use and abuse the issue. It should be remembered that the "National Committee to Uphold our Constitution," for example, finally turned out to be a committee on behalf of Mr. Frank Gannett's candidacy. This committee went around soliciting funds from

doctors, because it was supposedly fighting socialized medicine. Recently the U S Chamber of Commerce in Washington sent men around to doctors inviting them to subscribe to that group's monthly publication. This was asked in return for an article which appeared in that organization's publication and expressed itself against socialized medicine. Another committee, I believe it calls itself "National Physician's Committee," is also abused by a political group which uses its name to request campaign contributions from doctors all over the country. Needless to say that such groups do not act for the benefit of organized medicine but mainly for their own advantage. Campaign promises are forgotten as fast as they are made. Although we are considered the biggest "suckers" in the country, we do not need to waste our money and issues on such selfish groups.

Meanwhile we are losing ground. Cities and Labor Unions are organizing their health services to deal with the problem of adequate medical care. The *A.M.A. Journal* is merrily printing

its own "Ten Commandments" and apparently waiting for its own Moses to do the trick. We doctors are either fighting among ourselves or against a public opinion which, if one may judge our public press, is very decidedly for a change in the present setup of medical care. I do not believe that the American people wishes us to imitate certain more or less efficient European systems of medical care. Regardless of the outcome of the presidential elections any successful candidate will have to deal also with this problem, although it cannot be of paramount importance in this world crisis. In the total mobilization of our country, which is to come sooner or later, we doctors will be among the first groups to relinquish certain professional liberties. Our spokesmen render a very sad performance, if they use a professional publication to print remarks which eventually will be considered inimical. They have not been elected to step into the political arena and to pronounce themselves on highly political matters. They do not represent a medical party and better leave the choice of a qualified candidate to the individual members. It would be more appropriate for them to call the doctors' atten-

tion to the fact that the medical profession in the State has created an organization called "Medical Expense Fund of New York, Inc.," the efficient function of which can largely help to make people forget the need for socialized medicine. This organization, sponsored by the State Medical Society, is unable to function, because doctors do not realize its purpose. Instead of using the statement of one presidential candidate that he is against socialized medicine and campaigning for his election, it would be wiser to promote this new organization.

Very truly yours,

October 14 1940

CURT B. HARDT, M.D.

Note: This is published for the information of all concerned. The Medical Society of the State of New York does not and has not taken sides in the Presidential election. It has published statements from both candidates. We agree with the writer when he says:

"I do not believe that the American people wishes us to imitate certain more or less efficient European systems of medical care." Of course we approve medical indemnity insurance and our stand in compulsory health insurance remains unchanged.—Editor

MR. WANVIG CALLED INTO SERVICE

Mr. Harry F. Wavign, of New York, the authorized indemnity representative of the Medical Society of the State of New York, through whose office goes the malpractice in-

surance for the members under the group plan, has been called to Washington for service in the administrative office of the national headquarters of the Selective Service System.

Postgraduate Medical Education

THE *Course Outline Book* and other announcements concerning postgraduate medical education are now available. The Council Committee on Public Health and Education presents forty-one courses covering a wide range of subjects. A large group of physicians, experienced in practice, teaching, and investigation, will conduct these activities.

In addition to the courses and special lectures given in the past, several new courses and more instruction in plastic and reconstructive surgery are offered.

Arrangements may be made for the courses of five to eight lectures and for special lectures, demonstrations, and clinics in a number of subjects. County medical societies, hospital staffs, and other medical organizations interested may obtain further information by addressing the chairman of the committee,

O. W. H. MITCHELL, M.D.
428 Greenwood Place
Syracuse, New York

CRYMOTHERAPY AND ITS RELATION TO HIBERNATION

W LAURENCE WHITTEMORE, M D , JAMES R LISA, M D , and PAUL K SAUER, M D

(From the City Hospital, New York City)

THE recent attention focused on cryomotherapy has been of primary interest because of its application to the treatment of cancer. In this investigation many interesting facts and questions concerning cryomotherapy have developed, and many observations have been made that invite further study and work. Cryomotherapy has been compared to hibernation and has been called artificial hibernation. In reality, however, it is more truly a process of refrigeration and differs from normal hibernation in several respects. The ideal sought after in cryomotherapy is the induction of true hibernation.

One hundred and forty-two years ago Dr James Currie,¹² FRS Edinburgh, and physician to the Liverpool Hospital, reported that he had lowered the temperature of Richard Sutton to 83 F, while keeping him in a brine bath at 40 F over a period of forty-five minutes. But aside from Dr Currie's experiments on healthy individuals a careful perusal of the literature fails to reveal any such cooling in human beings until Temple Fay and Lawrence Smith¹ announced their findings in a very careful and complete report on "Temperature Factors in Cancer and Embryonal Cell Growth."

We then learned that man's temperature had been reduced from 10 to 18 degrees below normal for periods of one to five days and in 1 case of theirs for eight days. In this report they drew attention to the differences in surface temperature in different segments of the body—the lowest in the extremity segments from 88 to 90 F, and the highest in the fifth thoracic, the breast segment. Reviewing statistical literature, they pointed out the relative infrequency of primary and metastatic carcinoma developing in the parts of the body of lowered temperature as

compared with those parts where high temperatures existed. They also demonstrated that undifferentiated cell growth and activity require an optimal temperature, below which these cells are adversely affected. With these data the applicability of cryomotherapy in the treatment of malignant disease seemed to offer hope of a beneficial effect. It was also demonstrated that the temperature of local areas of tissue could be lowered to 40 F without damage to normal cell growth, yet at the same time, inhibiting the growth of abnormal or undifferentiated tissue.

It would be of interest at this point to compare some of the observations made in hibernation with those found in human cases treated by cryomotherapy.

As to the causes of hibernation for three hundred years observers and anatomists have referred to the so-called hibernating gland—at first thought identical with the thymus but which in some animals is a well-developed deposit of fat with a multilocular type of adipose tissue, with cells one-half the diameter of ordinary fat cells, and a large amount of grossly cellular cytoplasm, and a large spherical nucleus. In 1923 A T Rasmussen⁸ in an article on the so-called hibernating gland gave a list of anatomists who had found this polylocular, definitely circumscribed adipose tissue in the subscapular and dorsocervical regions in man, and he, himself, also described his examination of the perirenal fat of half a dozen human specimens from birth to two years of age. In 2 of his cases, 1 a newborn and 1 case 1½ years of age, he found a variable amount of cells essentially like those found in the hibernating glands of animals. Cushing and Goetsch⁷ found what they described as "the most striking histologic changes occurring in the anterior lobe of the pituitary gland" in an ex-

amination of seven hibernating animals. They also stated that the injection of pituitary extract was the most effective means of raising the body temperature with coincident improvement in the animal's condition. Cushing also referred to peasants living in a certain remote part of Russia who lived most of the winter in a somnolent state when supplies were scarce, rousing themselves once a day for a scant meal. Cushing also suggested that discrepancies among observers using pituitary extract may be due to seasonal changes in the subject's pituitary gland. The influence of the pituitary in cryotherapy has not been evaluated. Histologic studies have not been available nor has the effect of pituitary therapy been tried.

Many observers have noticed that many insects and some animals,^{4,5}—grasshoppers, potato beetles, ants, snails, and certain mammals including the English woodchuck—dehydrate themselves before going into hibernation. The more dried out the animal the more cold-hardy it seems to be. In the humans the closest approximation to this dehydration has been observed in cases of morphinism both at Lenox Hill and City Hospitals. In these cases there was an excessive gastric hypersecretion, so severe in 1 case treated at Lenox Hill Hospital as to necessitate replacement of fluid intravenously. In the early cases treated by Fay and Smith,¹⁴ when intermittent feeding was not used, it was necessary to employ intravenous saline immediately after emergence from cryotherapy in order to combat shock. Possibly the explanation lies in the fact that a human is normally not a hibernating animal.

The respiratory exchange in animals is lowered, and when the temperature is below 60 F the carbon dioxide discharged is one-tenth to one-twentieth the quantity eliminated by the animals at rest and awake. The oxygen absorption is not reduced in the same proportion so that the respiratory quotient may be as low as 0.51. In other animals, as dormice, it may drop to 0.2. Corresponding changes in the human have not been found.

In 1805 Dr Henry Reeve,⁵ F.R.S. Edinburgh, reported that the blood of hibernating woodchucks will not congeal in temperatures several degrees below freezing, though if the blood is taken from the animal in its active state it will freeze when exposed to the same temperature. The effect of cryotherapy on this type of response in human blood has not been investigated.

In blood chemistry studies no mention was made of serum magnesium, but Paavo Suomalainen⁹ of the Biochemical Institute in Helsinki showed that very consistently in hibernating animals the serum magnesium is increased, this occurred to a lesser degree in sleeping animals. The blood sugar and adrenalin were decreased. Calcium chloride brought the animal out of hibernation. Animals injected with magnesium chloride in the autumn go quickly into hibernation. In the human study made on the levels of urea, N P N, cholesterol, sugars, chlorides, and CO₂ combining power, calcium and phosphorous, no significant changes were found at Lenox Hill Hospital and at City Hospital. However, Fay and Smith found a reduction in urea, sugar, and chlorides. No studies on magnesium in the human have been made.

In 1831 Marshall Hall⁶ wrote the following: "On March 9 soon after midnight I took a hedgehog which had been in a state of uninterrupted lethargy during 150 hours, and divided the spinal marrow just below the occiput, I then removed the brain and destroyed the whole spinal marrow as gently as possible. The action of the heart continued vigorous during four hours, when showing no prospect of termination to the experiment I resolved to envelope the animal in a wet cloth, and left it until early morning. At 7 00 A.M. the beat on both sides of the heart continued. It still continued to move at 9 00 A.M. At 11 30 o'clock all were naturally motionless, yet were equally contracted on being stimulated by the point of a knife. At noon the two ventricles were alike unmoved on being irritated as before, but both auricles contracted. Both auricles were

shortly after inmittable " This new force or strength of the heart in hibernation has been noted by many observers In the early observations of Currie he also noted that the pulse became very small and almost imperceptible at the wrist, "but the heart pulsed with great steadiness and due force." In 1915 Harvey Cushing and Emil Goetsch⁷ noted that the hearts of animals that had been in hibernation for some hours continued to beat after the fashion of the batrachian heart for an unusual length of time when removed from the body after death These observations have been borne out in more recent work All observers have noted that, coincidentally, the respirations became regular and unusually slow

The basal metabolic rate in the hibernating animal is definitely lower than normal In humans undergoing cryomotherapy a continuous drop commensurate with the time exposure has been shown to occur in the experiments conducted at Lenox Hill Hospital Smith and Fay¹⁰ thought metabolism readings unsatisfactory but were of the opinion that they tended to be lower in cryomotherapy

In comparing the nervous states of animals in hibernation to the human in cryomotherapy, there are several interesting comparisons that can be drawn In 1831 Marshall Hall⁶ demonstrated that the hibernating hedgehog could be immersed in water for twenty-two minutes and appear unaffected, whereas the active hedgehog, if similarly immersed, died in three minutes Similar experiments carried out with poison gases gave the same results In humans it is a common observation that the patients are completely amnesic as to their period in cryomotherapy, although they may respond rationally and intelligently to questions during this same time Cryomotherapy might be useful in the treatment of mental disease, e g, schizophrenia, and with this thought in mind we would like to quote a medical report written in 1798 by James Currie¹¹ on the case of a young man wild with insanity who was not quieted with 24 grains of opium in twenty-seven hours,

nor by emetics or tepid baths until, as Currie writes "perplexed with these extremes and keeping in mind the success of the cold bath in convulsive diseases, I ordered it to be tried in the present occasion The insanity returned with great violence on the twenty-first, the patient was thrown headlong into the cold bath He came out calm and nearly rational, and this interval of reason continued for twenty-four hours The same practice was directed to be repeated as often as the state of insanity occurred The directions have been followed, and on the morning of the twenty-third he was thrown into the cold water bath in the height of his fury as before. As he came out he was thrown in again, and this was repeated five times, till he could not leave the bath without assistance He became perfectly calm and rational in the bath and has remained so ever since "

Hibernating animals⁴ seek cold, dark, isolated, and quiet environments, for their surroundings play an important part during this period, although it is difficult to evaluate the importance of the respective factors Many of them, even during the state of hibernation, respond to stimuli Also in the use of cryomotherapy it has been the experience that quiet, darkness, and the avoidance of stimulation have their good effects One may see a rapid rise in temperature due to nervous or physical activity

Hematologic studies in the hibernating animal have not been reported In the human studies definite changes have been observed There is a temporary rise in the leukocyte count, a temporary elevation in the number of erythrocytes and the hemoglobin with a subsequent anemia, and definite progressively regressive bone-marrow changes affecting particularly the erythrocytic elements

The effects of some poisons have been tested out during hibernation In 1934 M S Taintor found that dinitrophenol injected into pigeons and guinea pigs failed to produce the usual stimulation if the environmental temperature was 38 to 42 F, that only 25 per cent of the birds died, and that the fever induced was only one-

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tenth of that induced at room temperature of 75 F¹²

Cryotherapy has been tried in cases of various infections. Toshio Akiyama,¹¹ in the Manchurian Medical College, inoculated a series of ground squirrels with the virus of lymphogranuloma inguinal and then put them into hibernation. The controls died, those cooled less than ten days died but the onset of infection was prolonged, while squirrels kept torpid for twenty days awakened unharmed and without clinical signs of disease. Specific antigens, histologic changes, and reinoculation in mice up to the third generation were negative in this last group. One patient with filariasis was reported by his Cuban doctor to have been relieved for some time after having been treated by Smith and Fay.¹⁴

As our understanding of cryotherapy increases it may happen that there will be a change in our technic, enabling us to approximate more closely a state of true hibernation. That there are other fields in addition to the treatment of malignant disease is also suggested. The possibility of its use in cardiac disease is suggested

from the work of Marshall Hall. Its applicability to various types of mental disease is suggested by the experiments of James Currie. Cases of chemical poisonings, polycythemia vera, snake venoms, and infections seem a rich field for investigation, while the results obtained and reported so far in human cryotherapy in cancer warrant further observation.^{1,15}

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BRITISH HEALTH AFTER NEARLY A YEAR OF WAR

In the London *Sunday Times* Lord Horder takes stock of the health of the nation after nearly a year of war, says a report in the *J.A.M.A.* While war is an evil thing, he thinks it has done good, like a hormone, in "activating the whole chemistry of the nation." It has had an accelerating effect on efforts to improve the condition of the people. As far as physical health is concerned, Lord Horder finds that it has kept at an unusually high level. The comparative mildness of last winter's influenza epidemic was a blessing. Cerebrospinal fever, an epidemic hazard of wartime, though it showed itself in the early part of this year, died down quickly and chemotherapy reduced its fatality to an unprecedented level. None of the common infectious diseases attained serious dimensions. Tuberculosis has shown no material increase, and even "the camp follower of war," venereal disease, has not got out of hand. For the control of all these plagues the intensified activity of the health services may take no small credit.

The evacuation of children from the danger areas, concerning which so many fears were anticipated, was, from the health angle, a huge success. Compared with the previous year the incidence of diphtheria and scarlet fever fell to two-thirds of that in 1938 and polio-myelitis to

just over one-third. The children benefited enormously in health.

The satisfactory condition of national health Lord Horder ascribes much more to the increasingly favorable conditions of the people during the years preceding the war than to the care exercised during it. The contrast with Germany is marked. Dr. Gumpert, the author of *Heil Hunger*, summarizes the results of six years of Nazi rule as "an increased death rate, a falling birth rate, growing criminality, an increase in drunkenness, venereal disease, tuberculosis, food poisoning, and a doubling of mental disease." Gumpert considers Nazi rule "the most unwholesome political system ever born in the brain of man."

"In physique we are far better prepared than was the enemy at the outset of war, and we have kept well ahead of him. But now comes the testing time." Vigilance in health must include the worker as well as the fighter. That this is already apparent to the mind of the minister of health is shown by his memorandum on "Hours of Work and Maximum Output" and his exercise of emergency powers with regard to medical supervision of factories and the first-aid and welfare services connected with them. The vital question of fatigue is being carefully watched.

TREATMENT OF SOME COMMON DISFIGUREMENTS OF THE SKIN

A. BENSON CANNON, M D New York City

(Associate Professor of Dermatology, College of Physicians and Surgeons, Columbia University)

THE kinds and varieties of blemishes that disfigure the human skin, whether they be congenital or the residue of some cutaneous disease, are legion. Some of these defects are so important with regard to their effect on both the appearance and the general health of the patient that they are the subject of unremitting study on the part of dermatologists, who cherish the constant hope of finding some new and better way of preventing and curing them. Others are so negligible, as far as any deleterious after-effects on the patient's general physical condition are concerned, that they are considered relatively unimportant, and they would scarcely merit a place in any discussion by dermatologists were it not for their disfiguring effect and the desire, deep-rooted in every individual, to improve his appearance in every way possible.

Moles

In the latter-named category of cutaneous defects we may place the common mole, one of the most prevalent and, ordinarily, one of the least harmful of all skin blemishes. Almost everyone has at least one mole of one kind or another. Most of them are relatively innocuous, and, if the patient seeks to have them removed, it is usually for purely cosmetic reasons. Occasionally, however, a hitherto inactive, benign mole will suddenly begin to increase in size or will become irritated or infected or change color—changes which, fortunately, alarm the patient sufficiently so that he seeks medical advice. People who seek the advice of a physician in regard to the removal of a mole usually ask two questions (1) Is it safe to remove a mole? (2) Will the re-

moval leave a scar? To the first question I always answer "Yes, so long as the removal is thorough." I have removed many thousands of moles of all sizes, colors, and descriptions, using the desiccating current of the electric needle or the bipolar current of the surgical diathermy machine, and I have yet to see a malignancy develop after such an operation. But I *have* known instances in which incomplete surgical excision of a mole or its removal by actual cautery or with trichloroacetic acid was followed by the early appearance of a melanocarcinoma. For when the mole is removed by means of a desiccating current, the desiccated tissue sloughs off and the blood vessels are sealed, thus lessening the possibility of metastasis through the blood stream. Surgery merely removes the mole but leaves the severed blood vessels open to the passage of the cells, with the result that by the time the blood vessels are finally healed metastasis has already occurred.

I have vividly in mind the case of a young colleague from the West who came to see me not many weeks ago in regard to a metastatic melanocarcinoma involving the right axillary glands and the adjacent portions of the skin that had developed following surgical excision of a mole from his right shoulder the previous year. Histologic examination of the excised mole had revealed no malignancy, but about six months later the patient noted a tender, painful swelling approximately the size of an English walnut in the right axilla. His temperature was constantly around 101 F, and he felt weak and drowsy. A radiologist friend irradiated the area over the enlarged gland, giving him 150 r (unfiltered). His



FIG 1 Metastatic melanocarcinoma developing after cauterization of mole

symptoms were relieved almost immediately, the pain disappeared in about two hours, and his temperature became normal within twenty-four hours. Five days later he received another roentgen treatment (75 r, unfiltered). Within ten days the gland had disappeared and was no longer palpable. Several months later, however, the patient felt three swellings, each about as large as a hazel nut, in the same axilla. These were removed surgically. Biopsy showed the presence of melanocarcinoma. The patient asked me whether he should follow the advice of a radiologist and have massive roentgen irradiation over the affected area. My reply was that since it is a generally accepted fact that melanocarcinomas are radioresistant, such treatment would be entirely useless. I told him that his only hope for relief lay in surgical amputation of all the glandular and periglandular tissues, as well as of all of the affected skin, to a point well beyond the involved area. The radioresistance of melanocarcinomas and the necessity for treating them surgically are facts that should be stressed much more than they

usually are, I think. For there are radiologists who still recommend roentgen therapy for this disease, and frequently the dermatologist acquiesces in this useless treatment because the melanocarcinoma in question is inoperable and he feels that the patient will be happier if something is being done for him, even though the physician himself knows that the measures employed are vain (Fig 1).

To the second question that interests a patient with regard to the removal of a mole—namely, whether there will be any scar left—I usually answer that whatever defect may result from the operation, it will at least be much less noticeable than was the original blemish. As a matter of fact, the amount of residual scarring is dependent largely on two factors: the skill of the operator and the method he uses. I know of many cases in which, several months after the mole had been removed, neither the patient nor the physician could find the site of the operation, so carefully and thoroughly had the excision been accomplished. For my own part, I find that I get the best results, as I said earlier, when I use the lowest current obtainable with the desiccating needle or the bipolar current of the surgical diathermy machine. After cleansing the area with iodine and alcohol, I spray the side of the mole with just enough ethyl chloride to cause frosting and, with the smallest size hypodermic needle (1 cc capacity), inject a few drops of procaine hydrochloride underneath the mole in order to elevate it appreciably. Then with a very small sewing needle I desiccate first around the margin and then in the center of the mole, until it is thoroughly charred, and pare off the desiccated tissue with a sharp scalpel. Next, holding a magnifying glass over the area, I carefully desiccate the remaining center of the mole, the outlines of which can be plainly seen in the glass. Picking up the wound between the thumb and index finger, I carefully pare off the rest of the dead mole and lightly desiccate any particles that may have been left at its base. The last step is to bevel off the edges of the wound in order to lessen the

likelihood of scar formation I instruct the patient to sponge off the wound night and morning with cotton wet with boric acid solution and then to apply triple strength calamine lotion containing 2 per cent boric acid. On the eighth night I have him apply boric acid ointment in order to remove the crust. If any infection appears, the patient should be told to apply warm compresses of boric acid to remove the crust, and then to put on boric acid ointment and cover the wound with sterile gauze. Any superfluous granulation tissue or keloidal formations should be removed with silver nitrate or trichloroacetic acid. If a pitted scar remains after the wound is healed, I apply trichloroacetic acid around the margins with a flat stick applicator, in order to bevel off the edges.

Pigmented Moles

It is a common practice among most physicians, and even among dermatologists, to warn patients against molesting a pigmented mole or having it removed by any method whatsoever, as long as it is not undergoing any change, for fear of causing the development of melanocarcinoma, counseling them, however, to have it removed immediately if it begins to increase in size or to change color. As in the case of the ordinary mole, my advice is always to remove any pigmented mole immediately by desiccation or by surgical diathermy without waiting to see whether or not it is going to undergo any changes in color, size, or form, for once such changes have set in, the case has already advanced far beyond any possibility of cure, regardless of what method of removal may be employed. Black or bluish colored moles, in particular, should be removed, especially if they are located in any place where they are subjected to friction, pressure, or any other sort of irritation.

Only a little while ago a patient was referred to me for advice concerning a small, pigmented mole that had been present on the right buttock for several years. About a year before I saw him he had consulted a dermatologist who had

admonished him not to have the mole removed under any circumstances. Within the past few months, however, it had begun to increase in size. Becoming alarmed at this, the patient had consulted his family physician who had sent him to me. Examination disclosed a smooth, pea-sized, bluish-brown mole which looked innocent enough, but in the right inguinal region there was a large, subcutaneous gland, movable with the underlying structures, not painful, and not attached to the skin, besides two other pea-sized adjacent glands. The mole and the glands were removed. Histologic examination of the excised tissue showed that the "mole" was really a melanocarcinoma, and, in spite of the radical surgery employed, the patient died six months later from a metastatic melanocarcinoma.

Seborrheic Keratosis

Seborrheic keratoses are found most commonly in middle-aged persons, particularly those with oily, greasy skins. Not infrequently they occur in conjunction with an oily seborrhea of the scalp. They are brownish, sometimes skin-colored to brownish-black warty excrescences that appear for the most part on the back, in the region of the sternum, or along the hairline of the scalp. They vary from a pinhead to a half dollar in size. The lesions multiply and increase in size, but otherwise they are seldom troublesome. Once in a while, though, they do give rise to a more or less severe pruritus and secondary dermatitis, conditions often spoken of as senile pruritus. Occasionally, irritation from the warty growths may cause the development of epitheliomas, mainly of the basal-cell variety (Fig 2).

To remove the ordinary seborrheic keratoses from the face and neck, or the large, irritated ones from the trunk, I use the desiccating needle, first anesthetizing the area to be treated with procaine hydrochloride. After desiccating the keratosis, I curette the charred portion away and redesiccate the base of the lesion. If the warts are very numerous,



FIG 2 Seborrheic keratosis

however, removal with the desiccating needlers too laborious and time-consuming a process for the physician, to say nothing of causing great discomfort to the patient. In such cases I cleanse the parts with alcohol, freeze each individual keratotic area with ethyl chloride, and then, exercising traction on the skin, curette the keratoses with one or two strokes of a sharp-hooked curet, taking care always not to go too deeply. This amount of treatment usually suffices to cure the condition. One can ordinarily remove all of the lesions, from the entire back for example, in this manner in about twenty or thirty minutes. After all of the keratoses have been removed, I have the nurse apply a towel that has been immersed in hot boric acid solution and leave it on for five or ten minutes. This will usually relieve the pain and stop the bleeding. A thick coating of calamine lotion is applied next, and, finally, a jacket, improvised from gauze, is put on the patient. He is instructed to bathe as usual and to apply calamine lotion every night and morning. After seven or eight

days he should apply boric acid ointment to remove the crusts. This treatment gives most pleasing results, there being no noticeable scarring after a few weeks provided the curetting has not been done too deeply.

Senile Keratoses

The lesions of senile keratosis, like those of seborrheic keratosis, are most often seen after middle age. But, unlike seborrheic warts, they are found on the exposed parts of the body—the face, backs of the hands, etc.—and appear for the most part on dry skin, or on skin that has been exposed for long periods of time to sun, wind, and rain. Warts of this type are frequently called “sun warts,” “farmers’ warts,” “sailors’ skin,” etc. In their first stages they are usually spoken of as freckles, and, if they persist, are known as “liver spots.” They gradually increase in size and become dark in color, raised, and finally warty. The skin underneath the growth is red, rough, dry, and scaly. Because the lesions of senile keratoses are practically always a source of chronic irritation they are much more likely to become carcinomatous than are those of seborrheic keratosis. Hence they should always be removed, not only for the sake of the patient’s appearance, but also in order to prevent the development of skin cancer in the future (Fig 3).

The technic for the removal of senile keratoses is the same as that used for seborrheic keratoses, the only difference being that since the lesions are so much larger and more infiltrated and extend so much more deeply than do seborrheic warts they have to be desiccated much more thoroughly than do the lesions of the last-named disease. If treated properly they peel off in seven or eight days, leaving a pink spot, which disappears in time and leaves no scar. Patients who are inclined to have senile keratoses should be instructed in careful hygiene of the skin—frequent washing in warm water, using a wash cloth and a fatty soap, rinsing in cold water, and then applying a greasy cream. This treatment, simple as it is, is perhaps the best and most effective

method of preventing epitheliomas, usually of the prickle cell type, which so frequently arise from senile keratoses

Epitheliomas

It is a generally recognized fact that epitheliomas appear as a result of local irritation, usually of long standing, most often on the exposed parts of the body. This irritation may be due to any one of many different factors—exposure to sun or wind, chemicals such as tar, as, for example, in chimney sweep's cancer, a ragged tooth, scars resulting from burns caused by acids, hot water, or roentgen rays, or a long-standing, chronic disease such as rosacea, lupus vulgaris, lupus erythematosus, psoriasis, or syphilis (notably of the tongue). Epitheliomas are usually not difficult to recognize, first, because of their location, and, second, because of the age of the patient (it is generally believed that epitheliomas attack only elderly persons, though they will occasionally be found in people from 14 to 28 years of age). However, it is more difficult, clinically at least, to distinguish a basal-cell from a prickle-cell type of epithelioma. Lesions appearing on the mucous membranes are usually of the prickle-cell type, while those found on the face, ears, backs of the hands, or in roentgen burns are much more likely to be of the basal-cell variety. Prickle-cell epitheliomas grow much more rapidly, are more red and inflamed, and ulcerate much more rapidly than do the basal-cell ones, while basal-cell epitheliomas are characterized by rolled, pearly, telangiectatic borders and a central, eroded, crusted area—features that are not common to the prickle-cell group. It should not, I believe, be necessary to point out that often a definite differentiation of basal-cell from prickle-cell epitheliomas can be made only on the basis of histologic examination, for which reason a biopsy should always be made in every case of skin cancer in order that one may be absolutely certain as to which type of epithelioma is involved.

Basal-cell epitheliomas are simple, relatively benign growths that are readily



FIG 3 Senile keratosis

amenable to a variety of therapeutic methods, chiefly surgery and radiotherapy. Squamous-cell epitheliomas are much more serious, though many of them, too, yield to treatment, particularly with roentgen rays or radium. The important factor in the treatment of any type of epithelioma is to be sure that whatever the method chosen it should be thorough. I feel that it is almost better not to treat an epithelioma at all than to treat it inadequately. There has been many a case of epithelioma, treated over a period of years by innumerable methods—acids, curettage, electric needle, actual cautery, excision, roentgen rays, and radium—in which the patient finally died as a result of the direct extension of the epithelioma into some vital area—for example, the nasal accessory sinuses or the brain—simply because none of the methods was applied sufficiently thoroughly. It sometimes happens, too, that after years of inadequate treatment the patient will be found to have both basal- and prickle-cell types of cancer in the same lesion, the latter having been produced by irrita-



FIG 4 Early squamous cell epithelioma of lip of one month's duration, resembling chancre

tion from the type of treatment used (Fig 4)

I find that I obtain the best therapeutic results if I remove the growth, under local anesthetic, with the electric needle or the electric knife and then curette, always being careful to go well beyond the borders of the growth. After the area has been thoroughly curetted, I redessicate it and immediately afterward apply roentgen therapy (750 r, unfiltered), again taking care to go far beyond the edges of the

wound. The patient is instructed to keep the wound clean by sponging it twice a day with cotton soaked in boric acid solution and then to apply calamine lotion containing 2 per cent boric acid. If the wound is a small one, it may be left uncovered, but for large ones—those ranging from a five-cent piece to a half dollar in size—I recommend that they be covered with sterile gauze after the calamine lotion has been put on. In four or five weeks, after the reaction to the first radiation has subsided, I give a second dose of roentgen rays (600-750 r, unfiltered) or an equivalent dose of radium, which I repeat a third time in another four or five weeks. By this method of treatment we can accomplish what I believe to be a thorough removal of the epithelioma by electrosurgery, and, in addition, we have the supplementary aid of three roentgen treatments (a total of approximately 2,000 r). It has been my experience for almost twenty years that recurrences appear only rarely when this method is used, while before that time, when other therapeutic methods were favored, I observed that recurrences were not uncommon.

NAVY MEDICAL CORPS SEEKS APPLICANTS

Rear Admiral Ross T. McIntire, surgeon general of the Navy, stated in Washington on September 5 that the Medical Corps of the Navy is being increased to a strength proportionate with the expanding Navy and Marine Corps, and that examination for appointment as commissioned officers of the Medical Service will be held January 6 to 9, inclusive. At the same time, he said, the medical arm of the Naval Reserve is being increased.

The examinations will be for appointment as assistant surgeon in the Medical Corps of the Regular Navy, effective about two months from date of examination, and for acting assistant surgeon (intern), effective July 1, 1941.

Requests for authorization to appear for the examinations should be submitted to the Bureau of Medicine and Surgery, Navy Department, Washington, in time to permit the authorization to reach the applicant prior to December 30, 1940.

Applicants for appointment as assistant surgeon must be citizens between the ages of 21 and 31, graduates of Class A medical schools and must have completed one year of intern training in a

hospital accredited for intern training by the Council on Medical Education and Hospitals of the American Medical Association.

Applicants for appointment as acting assistant surgeon (intern) are not required to submit evidence of previous intern training, and are appointed for a period of eighteen months, during which time they serve as interns in the larger naval hospitals which are approved for intern training. After one year of service, acting assistant surgeons are eligible for examination for appointment as assistant surgeons. Acting assistant surgeons and assistant surgeons receive the pay and allowance of a lieutenant (junior grade).

Information may be obtained by addressing the Bureau of Medicine and Surgery, Navy Department, Washington. Applications for appointment to the Medical Corps of the Naval Reserve should be addressed to the commandant of the naval district in which the applicant resides. The address of the commandant may be obtained from the Bureau of Medicine and Surgery, Navy Department, Washington.

The Executive Officer of the New Jersey State Medical Society has announced that there is a vacancy in the Muhlenberg Hospital in Plainfield, New Jersey.

This is a residency covering general work which pays \$25 per month with full maintenance for the first year, and \$35 per month with full maintenance the second year.

PROBLEMS IN DIAGNOSIS AND TREATMENT OF RECURRING VESICULAR ERUPTIONS OF THE HANDS

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RECURRING vesicular eruptions of the hands fall into two large groups (1) those that constitute merely a localized portion of a disseminated or generalized vesicular or vesicobullous dermatosis, such as pemphigus, dermatitis herpetiformis, hydroa vacciniforme, erythema bullosum, iododerma, etc., and (2) those that are prone to attack the hands as sites of predilection. The second of these groups has been selected for discussion. (Since pustular psoriasis and bacterids are not, strictly speaking, recurring vesicular eruptions, the discussion of these two dermatoses is not included in this lecture.)

The second group embraces those vesicular eruptions of the hands that (a) are caused by contact of the hands with substances to which the skin is hypersensitive, (b) those resulting from infection with fungi, (c) those referred to as "idiopathic," such as eczema manuum or nummular eczema of the hands, and cheiropompholyx, (d) those caused by chemical, mechanical, or physical agents, (e) those that occasionally occur in the course of atopic dermatitis.

All of these are clear-cut entities, and given the characteristic clinical appearance in any specific case a diagnosis may be made on inspection. The recognition of an acute vesicular and bullous contact dermatitis presents no difficulties to the practiced eye, and, if the patient has not already offered information as to the exciting cause, the first questions that the trained dermatologist will ask will be directed along these lines. This applies as well to the other specific entities. But this should not be interpreted as an argument implying that etiologically different eruptions of the hands are always clinically distinguishable merely by physical

examination, nor should the apparent facility of diagnosis serve as an excuse for neglecting a thorough physical examination or for performing any tests that may be helpful or even necessary to arrive at an accurate diagnosis. On the contrary, even the most painstaking examination, repeated history taking, patch and intradermal testing, and even a study of the subsequent course may not in many instances—and these are altogether too many—be of sufficient aid to establish a correct diagnosis. It is this group of cases that we wish to discuss in greater detail.

It would seem that since the number of etiologically different vesicular eruptions occurring on and confined to the hands and feet are few it would be a relatively simple matter to determine whether a vesicular dermatitis is

(a) Due to contact, by eliciting an accurate history relating to substances with which the individual comes into contact and that may be responsible for the eruption, by performing patch tests with the suspected substances, and by a history of recurrences after repeated exposures.

(b) Due to fungus infection, by obtaining scrapings from the lesions and making direct examinations in potassium hydroxide solution, by planting the material on a suitable culture medium, and by utilization of the intradermal trichophyton test.

(c) One that occurs in the course of disseminate neurodermatitis by eliciting a personal and family history of atopy, a history of previous eruptions, and by scratch tests with foods, epidermals, inhalants, etc.

(d) Cheiropompholyx, by its deep-seated sago-grain-like vesicles and by certain distinctive features that cheiropompholyx has in contrast to other vesicu-

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lar eruptions In cheiopompholyx there is a complete lack of history with reference to contacts, an absence of pre-eruptive erythema, a tendency toward sudden outbreak and rapid regression, and an absence of subsequent eczematization The vesicles are more apt to undergo involution as a result of shrinkage and desiccation, rather than of breaking down of the vesicle wall Excessive sweating may or may not be linked with the eruption, but the view is generally accepted that the sweat apparatus does not actively participate in the disease The trichophytin and patch tests are negative

(e) Nummular eczema This term is used to designate an idiopathic, erythematous-vesicular eruption, disseminated in spots of varying size and usually located on the extremities In many cases only the dorsal aspects of the hands and fingers are involved The tendency toward recurrences is pronounced, and the eruption is often recalcitrant to treatment

(f) A dermatophytid of the hands By some clinicians this is regarded as an acute eruption that runs a self-limited course and goes on to spontaneous healing in the same way as the generalized hematogenous dermatophytids which occur in the course of other tinea infections such as tinea capitis It is an indisputable fact that eruptions—at first vesicular and later scaly, stubborn, and treatment-resistant—occur on the hands during the course of active fungus infection of the feet If one assumes that a phytid cannot exist for more than a certain length of time after apparent cure of the infection on the feet, then an arbitrary period must be determined beyond which an eruption can no longer be called a phytid This is obviously impossible Until such a time as there is proof to the contrary, such persistent eruptions must be regarded as dermatophytids

Occasionally the problem of dermatophytids of the hands is even more confusing One or more recurrences of a vesicular eruption on the hands may occur in the absence of demonstrable fungus infection of the feet in patients who previously suffered from ringworm on the feet

and a phytid on the hands The latter appears identical in every respect with the previous phytid eruption Is this recurrent eruption due to fungus infection on the feet, possibly on the toenails, but in a quiescent state, or has the patient become sensitive to some other substance possibly of endogenous origin, which is responsible for these recurrences? These are questions that must still await answers

In spite of information gleaned from the patient's personal and familial history, past and present, and in spite of results of various tests and differences in the clinical appearances of different eruptions, the diagnosis of many vesicular eruptions on the hands is still beset with difficulties

Among these is that created by the morphologic similarities of etiologically different eruptions It is to be expected that dermatoses with an identical elementary lesion—the vesicle—confined to a limited area, such as the hands, will bear clinical resemblances to each other regardless of etiology In the absence of complicating factors the differential diagnostic problem can be fairly easily solved in most instances by a consideration of the patient's history as to previous eruptions, personal or familial atopy, occupational and other contacts, past or present infection with fungi, examination for fungi, patch, scratch, and trichophytin tests, etc

Another difficulty in establishing a correct diagnosis—in reality a series of closely linked difficulties—derives from the fact that more than one etiologic factor may be, and often is, operative in a given case and that the present limitations of our knowledge with respect to the effects of one disease process on another does not permit an accurate evaluation of the role played by each of these processes—singly or in combination, at the same time or at different times Since industry provides the greatest number of such problems and since the responsibility for the establishment of causal relationship, qualifications relating to compensation, and future status of the individual in industry lies largely with the

medical profession, this phase of the problem is best discussed with relation to the patient presenting an industrial dermatitis

Let us take, for example, the individual employed at a soda fountain and whose hands are moist or wet during the greater part of the working day. After a period of weeks, months, or even years, a vesicular eruption appears on the palms, the palmar aspects of the fingers, and along the sides of the fingers. On examination, the patient also shows a moderate amount of maceration and scaling between the toes. The intradermal trichophytin test is positive. No other source of contacts can be elicited in this patient's history, and the presenting eruption is the first from which he has suffered. Is the eruption on the hands a dermatophytid wholly due to the fungus infection on the feet, or is it wholly due to wetting of the hands? Are we dealing with an occupational dermatophytid in the sense that the patient's occupational contacts served to lower the resistance of the affected sites on the hands leading to the development of the dermatophytid? There can be no precise cut-and-dried answers to these questions.

However, there is this to be said: the nature of the occupation in which the patient has been engaged—one demanding sustained contact with water—may in itself be responsible for an eruption of such character, and a middle-of-the-road conservative policy would dictate that cases of this type be classified as occupational dermatoses. In any event, it would be difficult if not impossible to prove that occupation is not at least a contributing factor.

The positive trichophytin test is of no diagnostic help in differentiating these eruptions, since patients with fungus infections of the feet, past or present, will respond with a positive intradermal test in the large majority of cases.

In the course of vesicular eruptions affecting the hands, changes in the clinical picture may take place from time to time and recurrences may appear, even if the patient is removed from the original

sources of contact such as eczematogenous substances (allergens), degreasing agents, or water. The persistence of an eruption assumed to be proved to be caused by an occupational contact, long after removal from the source of contact or repeated remissions and recurrences after removal from the source of contact, is difficult to explain, unless one is willing to accept the altogether plausible explanation that sensitization to some autogenous substance has taken place.

If the eruption has a tendency to be confined to the hands, it is probably due to the occurrence of cellular changes in the affected areas with a resultant lowering of the threshold to any future stimulus capable of eliciting a vesicular response. Sensitization to an autogenous antigen need not call forth more than a localized response resulting in vesicle formation, any more than a circulating antigen need call forth more than a localized urticarial response. The analogy can be carried further in that urticaria occurs in waves with periods of remission.

Let us next consider the patient with *nummular* lesions, at first erythematous and later vesicular and scaly, on the fingers or on the hands—an eruption having the clinical appearance of nummular eczema of unknown cause. In addition, the patient presents well-defined maceration and scaling on the toes and a vesicular eruption on the soles. Fungi are recovered from the feet but not from the hands. The trichophytin test is positive. Assuming that the patient is employed behind a restaurant counter and that his routine duties include the preparation of salads and the cleansing of dishes, is his eruption a phytid, is it a nummular eczema of unknown cause, or is it an occupational dermatitis? The eruption improves under treatment, which includes temporary cessation from work. The patient then takes up some other occupation that does not necessitate wetting the hands, but in a relatively short time—a period of some few weeks—there is a recurrence of the nummular vesicular eruption. The fungus infection of the feet is again active. Is this

new eruption on the hands a recurrent dermatophytid, a recurrent nummular eczema of unknown cause and not related to the patient's occupation, or is the active fungus infection of the feet the precipitating factor, giving rise to an eruption in an area of lowered resistance resulting from previous occupational contacts? Or has the previous eruption sensitized the patient to some autogenous substance to which he is now reacting and which may account for future recurrences?

Even if the etiologic eliciting factor is a different one in such a recurrence, the similarity in clinical appearance may be accounted for in the same way as are the fixed eruptions and urticaria caused by different drugs, that is, the reaction form is nonspecific in character and can be elicited by many different substances.

The problem in this instance and in similar cases is no closer to solution even if fungi can be demonstrated in a toenail or, for that matter, even if the feet appear to be free from fungus infection.

In view of the fact that the recurrence in this patient was precipitated without exposure to occupational hazards similar to those that were operative during the first attack, one might ask whether the patient's previous occupation bore any relationship to the development of the original eruption. It has already been indicated that dermatitis may occur in the course of such occupations and also that recurrence may take place in the absence of such contacts or contacts with other eczematogenous substances. Fortunately our compensation laws are sufficiently elastic to permit the classification of such recurrences as constituting occupational dermatoses.

In this connection it is interesting to note that dermatologists are sometimes called upon to determine in categorical fashion whether a recurrence is due to a new contact (new in the sense that the job is a different one, even if the type of work and contacts remain the same) or whether the recurrence is still to be considered the result of the patient's previous occupation. The case in point serves to illustrate how impossible such a task is

Legally it may be essential to determine this point, since two insurance carriers may be involved and the carrier responsible for the recurrence may have to be designated. However, the law should be elastic enough to allow for the limitations of knowledge and become less elastic only as advances are made permitting of more exact definition. It would be wiser to have the insurance carriers share the cost in such cases rather than request the physician to answer the unanswerable.

Next to be discussed is a patient who has ringworm of the feet and a recurrent vesicular dermatitis of the hands, recalcitrant to treatment. His occupation as a bus boy keeps his hands moist or wet during the day. Some improvement, but not a great deal, takes place when the patient is not employed for several weeks. Over a period of years he is rarely free from a discrete vesicular eruption on the hands. During this prolonged course, the patient suddenly develops typical lesions of disseminate neurodermatitis, with involvement of the eyelids, upper lip, sides of the neck, cubital areas, and thighs. From the etiologic point of view, what part has the neurodermatitis background played in the incidence of the eruption on the hands? What part has the fungus infection played? Has occupation been a contributing factor? The answer to the last question is that occupation has most likely played a part. How many stubborn vesicular eruptions on the hands occur in individuals potentially belonging in the asthma-hay-fever-neurodermatitis group—the group of latent atopics? In connection with such cases one is tempted to conjecture about the role played by the eruption on the hands and its significance, etiologically, with relation to an outbreak of disseminate neurodermatitis.

We have thus far discussed the vesicular eruptions that present diagnostic problems in patients whose hands are exposed to water or soap solutions and that are complicated by ringworm infection of the feet, latent atopy, and recurrences following a return to some other type of work not necessitating wetting of the hands or contact with eczematogenous substances.

Problems in diagnosis created by sensitization to *allergic* substances have still to be considered

The number of substances encountered in industry that may give rise to acute vesicular eruptions on the hands is legion. However, such eruptions are rarely confined to the hands, since the entire cutaneous surface usually participates in the sensitized state and the eruptions almost always manifest themselves on other parts of the body, especially the exposed parts—the face and forearms. The causal agent can be detected with relative ease, since the substances with which the worker comes in contact are known and can be readily made available for testing. Outside of industry, the detection of the causal agent may not be quite as simple and, in fact, is often difficult. Extra-occupational activities must be borne in mind during the process of examination and inquiry, and other physical agents, such as light, heat, and cold, should not be forgotten in the search for causative factors.

The study of acute vesicular eruptions, due to contact, sheds some light on the effects of one disease process on another. In these cases there is a known factor, proved by patch testing, which helps to serve as a control. Consider, for example, the case of a patient who is employed as a nailer in the fur industry and whose routine duties require that he handle fur that is wet as well as dyed. A pruritic vesicular eruption appears on the hands, disappears when the patient remains away from work for several weeks, but recurs almost immediately upon returning to work. He shows no evidence of ringworm infection of the feet. The results of patch tests with paraphenylenediamine and with dyed furs that he handles are strongly positive, but an attempt to eliminate contact with paraphenylenediamine by changing to another job in which he handles only undyed furs leads to the discovery that wetting of the hands alone is sufficient to cause a recurrence of the vesicular dermatitis. Frequent wetting of the hands in such a case probably serves to lower the resistance to

the development of sensitization to paraphenylenediamine.

Epidermal sensitization is usually multiple, and sensitization to one allergic substance lowers the threshold to the development of sensitization to other eczematogenous substances. But in this instance both an allergic and a non-allergic substance gave rise to similar vesicular eruptions. The vesicular reaction to water is surely not an expression of sensitization to water as such but is dependent on certain cellular changes that have taken place and that permit water to act as a precipitating cause. Whether the vesicular reaction is due to the release of a secondary antigen is not known, but one must consider such a possibility in eruptions produced by nonantigenic substances in general, the best examples of which are those produced by physical allergens.

In patients exposed to allergic substances in the course of occupation, the diagnosis may be established by positive patch tests or by repeated recurrences following repeated exposures. The diagnostic problems pertaining to vesicular eruptions due to allergic contacts are those occasioned by (a) eruptions that do not go on to complete healing even after a reasonably long absence from contacts with the causal agent and without exposure to other substances that might seem to prolong the course, and (b) eruptions that recur in spite of absence from contact with the causal agent or with other allergic substances.

In such cases we are confronted with problems similar to those already discussed in the cases of patients whose occupation necessitates frequent wetting of the hands. Some of these are complicated by ringworm infection of the feet. The afore-mentioned explanations to account for the prolongation of the course of the eruptions apply here with equal force.

In patients with fungus infections of the feet, the hands, particularly the palms and palmar and lateral aspects of the fingers, are considered to be areas of lowered resistance to the development of

vesicular eruptions. Dermatophytids of the type resulting from infection of the feet rarely appear on parts of the body other than the hands. The reason for this affinity appears to be based on the close anatomic relationship existing between the hands and feet. As such, one would expect, in general, that pathologic processes that involve one of these parts would produce repercussions in the other. Still, while this might safely be accepted as a fact, the reverse relationship should be borne in mind, the influence of primary eruptions on the hands in giving rise to secondary eruptions on the feet has not been sufficiently stressed. Occasionally one encounters patients in whom acute vesicular eruptions on the hands of contact (allergenic) origin have served to light up quiescent foci of ringworm infection on the feet and, in some instances, also to produce concomitant vesicular eruptions on the feet—probably phytids.

Treatment

Wet dressings are the treatment of choice for vesicular eruptions on the extremities. Acute vesicular eruptions due to contact with allergenic substances run a fairly rapid course and progress to spontaneous healing in most cases if the patient is removed from the source of contact. Such eruptions respond well to wet dressings of boric acid solution, magnesium sulfate solution, diluted Burow's solution (1:10–1:20), and isotonic salt solution.

The chief complaint is pruritus, and there is no remedy that affords as much relief as a properly applied wet dressing. Larger vesicles and bullae should be drained with a sterile instrument. After forty-eight to seventy-two hours of wet dressings, most eruptions will be ready for the application of a bland, soothing and protective paste, such as Lassar's paste or a paste made of liquor Burowi 10:0, anhydrous lanolin 20:0, and Lassar's paste 30:0. Pruritus may be so severe as to require administration of bromides or other sedatives, especially at night.

The more torpid and more persistent

eruptions, such as dermatophytosis, phytids, nummular eczema, neurodermatitis, and even cheiropompholyx, require more active remedies, such as solutions of potassium permanganate and silver nitrate.

Both of these remedies have a limited use since they discolor the skin. Potassium permanganate is used in dilutions of 1:2,000 to 1:4,000, preferably in the form of hot soaks, for from one to three hours daily. Wet dressings of silver nitrate solutions may be applied for several hours daily or even constantly and are used in dilutions of $\frac{1}{10}$ to $\frac{1}{4}$ per cent. In some cases wet dressings may be advantageously used in alternation with other remedies, including the soothing Burow's solution paste or a more stimulating remedy such as oil of cade 15 and resorcinol 10, to which is added a sufficient quantity of zinc oxide ointment (30:0). In cases in which the vesicles are deep-seated and denudation of the upper epidermal layers seems to be indicated, a resorcinol-salicylic mixture may be used, as in the following formula: resorcinol 4.0 to 8.0 and salicylic acid 3.0 to 6.0 to which is added a sufficient quantity of 90 per cent alcohol (120:0). This preparation may be painted on the affected parts twice daily. Gentian violet in 1 to 2 per cent aqueous solution often proves to be a valuable remedy. Applied morning and night, it will cause desiccation and exfoliation in ten to fourteen days, after which the diseased areas are ready for the application of an ointment.

The most useful adjuvant in the therapy of torpid vesicular and scaly eruptions is the x-ray. Seventy-five roentgens (unfiltered) once weekly, in a series of 4 to 8 treatments, will bring about a more rapid cure in many cases than the most judicious use of topical remedies, but unfortunately recurrences are prone to follow altogether too soon after a course of x-ray therapy. Since x-ray treatments cannot be repeated too frequently without danger of injury, some efficacious topical remedy must be used to which the eruption shows a favorable response.

FLUOROGRAPHY: ITS TECHNIC AND APPLICATION

I SETH HIRSCH, M D , New York City

(From the Department of Radiology, Beth Israel Hospital)

THE present technic of fluorography or photography of the fluoroscopic image is the result of a gradual development of the method that dates back to the period of hectic experimentation immediately following the announcement of Roentgen's discovery

In three laboratories in different parts of the world at practically the same time, efforts were directed toward photographing the shadows on a fluorescent screen by means of an ordinary camera. Thus, soon after Roentgen's discovery, Bleyer constructed and used an apparatus called the "photofluoroscope" for photographing the fluorescent image (Fig 1)

In the same year, MacIntyre was the first to attempt to make a series of successive pictures of a moving object. First, he made single exposures which he arranged on a moving-picture film. But later he directly photographed the moving image with a moving-picture camera

After considerable experimentation by many others, the method of screen photography was abandoned in favor of the direct roentgenography which is the method utilized today

Kohler, in 1907, revived the problem of photography of the fluoroscopic image, but it was apparent that the future of the method depended on the possibility of obtaining lenses of greater aperture, screens of brilliant luminescence, and photographic films of higher sensitivity

In a paper entitled "Photography of the Fluorescent Screen for Roentgen Kematography and Other Purposes," read before the Philadelphia Roentgen Society on March 24, 1911, Caldwell presented all the basic and essential principles underlying the application of fluorography and foreshadowed its present-day application with scientific acumen

He pointed out the advantages of the method, the low cost, the simplification of filing and transportation, and prophesied that, with the development of screens of higher actinic properties, photographic films of greater sensitivity, lenses of greater speed, and more intense excitation of the rays, the method would attain a great practical value and would revolutionize roentgenography. This prophecy is about to be fulfilled

The great improvement in recent years in fluorescent screens, in photographic material, and in lens construction is responsible for the revival of the method, so that its practical and routine application is now possible

De Abreu's work (Brazil) in 1930 represents the first large-scale application of the method. In fact, modern fluorography owes its present status to his ingenuity

In our work a commercial 35-mm.-film camera, equipped with an f/1.5 lens, is used. A slower lens is not suited for this work, and there is no faster lens ordinarily available that will cover this field

The screen used for fluorography may be of the zinc sulfide (fluorazure type) or a Patterson "B" screen. In this work both have been used

The photographic film must be suited to the color of the fluorescent light of the particular screen. Both the Eastman and Agfa panchromatic films give an excellent record of the Patterson "B" screen, while the Eastman special fluorographic film is best suited for the "fluorazure" screen

Apparatus and Technic

The apparatus consists essentially of a lightproof box of pyramidal shape with a fluoroscopic screen mounted at one end, a camera at the other, and means for ad-

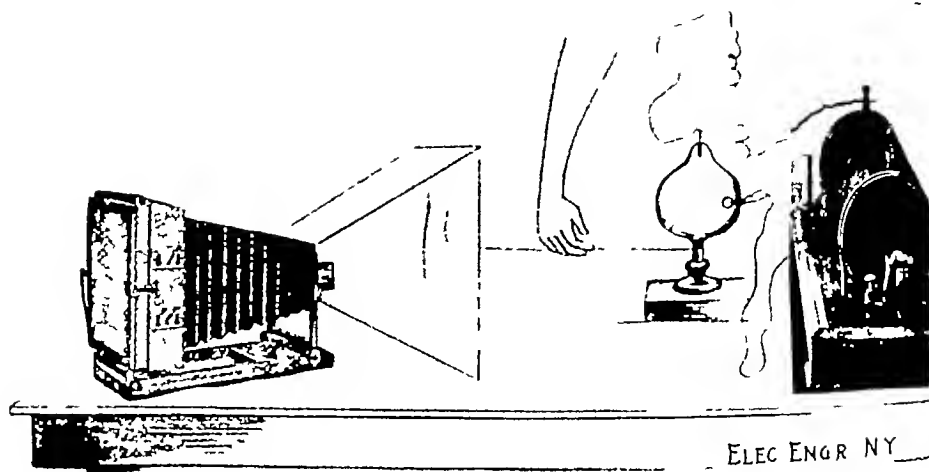


FIG 1

justing the height of the apparatus (Fig 2) *

The camera is mounted at a distance of 90 cm from the screen, the focus of the lens being determined once and for all by trial exposures. The camera is removable for loading and unloading of 150 cm of 35-mm film, enough for thirty-six exposures, but larger film holders may be devised. Mechanical means are provided for the winding of the film and the operation of the shutter from the outside of the box. The number of exposures made is recorded on an automatic counter.

A positive method of identification is necessary because the ordinary lead numbers are not always legible. The best method is to record the numbers and letters optically. The processing of such films requires scrupulous attention to small details. Insignificant dirt particles and scratches may ruin an otherwise good film. All solutions should be filtered, and the film should be processed in a tank suitable for the particular size film, different types of which are on the market.

The x-ray exposure required with the material utilized is about twelve times that necessary for the same object as the standard double-coated x-ray film in double high-speed intensifying screens.

* For a detailed description of the apparatus see Hirsch Fluorography, *Am. J. Roentgenol* 43, No 1 (1940)

Where much work is to be done, suitable tube cooling and proper energy distribution must be allowed for. A large rotating anode tube, preferably immersed in circulating oil, is useful. All electrical parts should be designed for heavy duty, and the protection should be adequate. The best machine for this work is either a condenser discharge apparatus or one with four-valve rectification.

The entire roll of film may be filed in holes in a board or, if cut into short strips, may be mounted in book form behind celluloid. But for hospital work where the films must be repeatedly consulted, it appears preferable to mount each film individually in a 2-by-2-inch slide with a paper mask on which is written any information desired. Such a mount avoids the inevitable scratching which appears if the film strips are handled frequently. These slides are filed in shallow filing cases.

The strips of films bearing the fluorograms may be viewed (1) by a magnifying lens—an arrangement may be made by which the film is drawn over an illuminated surface above which is mounted one or a series of magnifying glasses, (2) by projection—a good projector is necessary and a grainless viewing screen of a pale green color. A comparison between reductions from 14-by-17-inch films and enlargements from fluorographs to

the same projection showed no loss of important detail from the enlargements

Application and Evaluation

The method is, at this stage, applicable to the study of organs where the contrast of tissue is naturally marked or may be made so artificially by the use of contrast substance. Thus, the lungs, pleura, heart, and aorta in particular lend themselves to fluorography as does the bony system, skull, urinary tract, gastrointestinal tract, and esophagus when contrast media are used

The paramount advantage of fluorography lies in the simplicity of the method and in the reduction in the cost of the examination, particularly in thoracic and gastrointestinal work. There is considerable saving in the cost of the examination because of the use of the small-sized film, the relatively small amount of developer necessary for processing, the small space necessary for filing, and the discard of cassettes and intensifying screens

The fluorograph is valuable as control of fluoroscopy of the thorax, for it gives a permanent record of such an examination. A slightly enlarged print of such a film is a valuable addition to the clinical record, and the low cost makes possible a series of such examinations during the course of the disease. In fact, as an actual record of the disease it is superior to fluoroscopy, for it gives the lesion in greater detail. It is well known that changes in the lung can be visualized fluoroscopically only if they have a certain size, and tests have shown that changes of small area can be visualized on the fluorographic record that cannot be seen fluoroscopically

Fluorography is particularly applicable to the study of pulmonary tuberculosis, pleural and pericardial effusion, tumors of the lungs and mediastinum, etc., diseases in which, for study and control, frequent x-ray examinations are necessary but cannot always be made because of the cost of the large film examinations. The method has served for the control of pneumothorax treatment and for the serial study of the chest after phrenicotomy

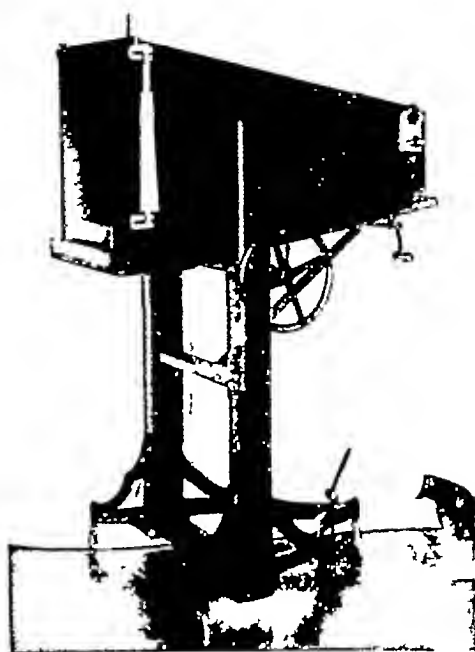


FIG 2

Since no detail is necessary and only contour is desired, the fluorogram is particularly useful in the study of the heart and vascular pedicle. Not only the shape, position, contour, and mobility may be thus recorded but, if a correction factor is established, the size of the heart may be determined. The oblique examinations by fluorography clearly show the structures in the posterior mediastinum and permit serial examinations of the contrast-filled esophagus during the act of deglutition. So also can serial examinations of the stomach and colon and gastric and intestinal motility tests now be made without consideration of the cost

Fluorography of the bony system makes possible mass anatomic-anthropologic surveys, as for instance in the study of ossification of the wrist bones, head forms, and general habitus and its relationship to visceral morphology

The low cost of fluorography makes possible the examination of large groups and permits surveys of whole populations—an application of tremendous social value. It makes possible the routine examination of the chest and gastrointestinal tracts of all admissions to the

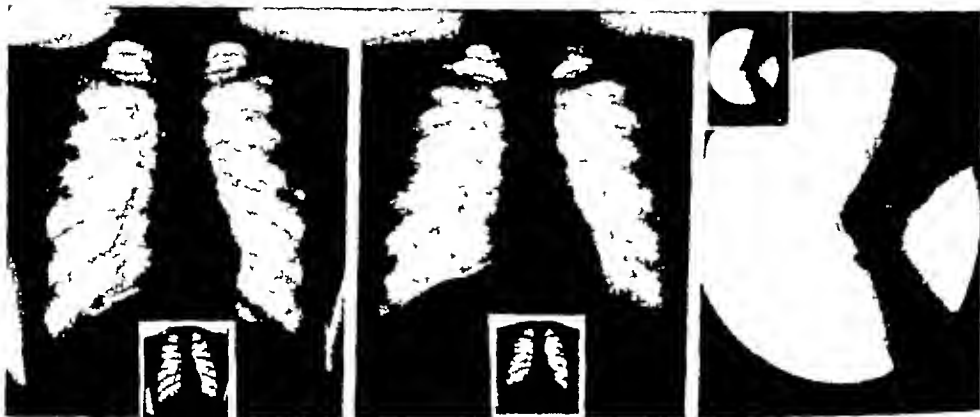


FIG 3 Normal fluorograms—originals and enlargements

hospital, a routine which will undoubtedly soon be introduced and will aid in the early diagnosis of many diseases of the lungs, heart, mediastinum, and gastrointestinal tract.

In hospitals where 30 to 40 per cent of admissions have an x-ray examination of the chest, not over 10 per cent of the films show changes of value positively to the clinician. These pathologic cases are, therefore, discovered at a great cost, which fluorography even when applied to 100 per cent of admissions will reduce materially.

In recent years attempts have been made to analyze for tuberculosis on a larger scale than ever before, and every year millions of tuberculin tests are administered to isolate reactors. The analysis is, however, incomplete without an x-ray examination. It is this inability to examine large masses of population who show no clinical or laboratory evidence of disease that is responsible for the failure to diagnose tuberculosis in its minimal stage in but a small fraction of the population.

Fluoroscopy has been used extensively for tuberculosis surveys and, while inexpensive, is relatively inaccurate, gives no permanent record, and is impractical in its application to the study of large groups because of the imposed limitation on the number of examinations possible per day by a single individual.

Surveys have been made with special apparatus that uses paper films on rolls

But even this method is relatively expensive and cumbersome and does not lend itself to general application and to the survey of large communities, though it is conceded that even this method is superior to fluoroscopy. However, fluorographic surveys on 35-mm films fill every diagnostic requirement, permitting the determination of the earliest lesions both in the lungs and lymph nodes. The routine and methods of its application are simple, rapid, and practical.

A great advantage is the simplicity of the x-ray procedure in that the determination of the disease is possible by one simple test which in no way disturbs or alarms the subject—an important consideration in overcoming the natural resistance to scrutiny. There is definite resistance exhibited toward tuberculin testing, and Douglas and Harmon in a recent study in Detroit found that 15 per cent of reactors failed to reappear for x-ray examination.

The speed with which the x-ray fluorographic surveys may be carried out (seventy-five examinations an hour), the promptness with which the results may be determined, and the accuracy of the analysis justify the statement that x-ray examinations of large sections of the population can be done for a very small fraction of what is now being spent annually for the hospitalization of patients whose disease is detected by clinical methods only after it has become so ad-



FIG 4 Pathologic heart (extreme right) Pulmonary tuberculosis showing old and recent lesions (left and middle)

vanced that long periods of institutional care are necessary and the recovery is jeopardized. Wherever such examinations have been made of large groups of apparently healthy adults, the number of cases found has more than justified the expense.

De Abreu advocated the creation of centers of special construction and organization for complete thoracic surveys, using fluorographic installations for the x-ray examinations. One million examinations could be made in such a center in one year by six units, each with its team of workers, and thus the populations of large cities could be examined at routine intervals.

The key to the control of tuberculosis lies in the discovery of all infectious foci followed by isolation of all sources of infection. Fluorography universally applied may do more toward the accomplishment of this test than any other procedure yet suggested.

Discussion

Dr Herbert R. Edwards, *New York City*—Dr Hirsch has added considerably to our newer knowledge of roentgenology through the use of his fluorographic technic, and I agree with him that perhaps the greatest use for this device would be in the field of tuberculosis. The newer concepts in tuberculosis control have increased the emphasis on diagnosis in an early stage. This is only possible by x-raying large masses of apparently healthy persons. Up to this time, the greatest deterrent to mass x-ray

surveys in this important field has been the cost of the x-ray. The unit cost per film, utilizing standard equipment, is beyond the budgetary limits of most agencies, and the capacity of these machines as well is sharply limited as to the number that can be done within a day. Thus far, the nearest approach to a cheap x-ray for the masses has been the development of the Rapid Paper Method and paper in cut sheets, which in our experience can be purchased at about half the cost of celluloid. We have used both of these methods extensively for the past several years, and the results have been very satisfactory. The paper film will reveal the early infiltrate just as well as the celluloid film.

The recent development of the photograph of fluoroscopic images has offered another advance in this important field. Basically, if the small film is satisfactory and indicates all types of lesions including, particularly, the early infiltrates, it will be possible to reduce the unit cost by at least the difference between the actual cost of the small film as compared to the standard size. There are certain factors that must be obtained in any method if it is to be used in tuberculosis survey work. They may be summarized as follows: (1) diagnostic—they must reveal early infiltrates, (2) transportability of the equipment, (3) ease and facility in reading the film in large numbers, and (4) cost.

Within the past few years, more particularly in the recent months, it has been my privilege to review the 35-mm. film produced locally by Dr Hirsch in comparison with both paper and celluloid in the 14-by-17 size produced with a 200 ma. technic with rotating anode tube. Also, I have seen the 35-mm. film produced by others in this country and some of the work from abroad, including the recent development by the Sie-

mens Company We have also made a few test shots of the 4-by-5 film produced by General Electric in comparison with 14-by-17 paper and celluloid film in one of our clinics, and I have also seen the work of Birkelo and Douglas in Detroit As one views this material over the past year or so, it is obvious that there has been steady progress in the development of the small film However, I do not feel that at the present time it is completely comparable to the paper film for accuracy in diagnostic detail In all the small films there has been little or no difficulty in indicating gross lesions of consolidation, cavities, etc However, the early infiltrate has been missed in from 28 per cent as quoted by Birkelo and Douglas to 20 per cent as noted in our comparisons with paper and celluloid Also, lesions characteristic of the fine nodular markings in silicosis or hematogenous tuberculosis were not clearly visualized on the small film In fact, in some cases they were entirely missed, therefore, from our current experience, the microfilm seems to be more comparable with the fluoroscopic examination in the detection of pathology than with radiography under normal conditions

Transportability—The conduct of surveys will, in most instances, demand that the equipment be easily transported from place to place and be operated on an ordinary line of 220 a.c. The Siemens product, as well as that of Dr Hirsch, will operate on such lines, and the equipment can be moved with ease from point to point This is not true, however, with the General Electric equipment which is a 400-ma. machine and, consequently, is too heavy for transportation from place to place

Ease and Facility in Interpretation—One of the problems in large-scale survey work is the facility with which the films may be interpreted by the clinician or roentgenologist Our experience, thus far, clearly indicates that in neither the 35-mm nor the 4-by-5 size can we read nearly as many films within a given period without undue eyestrain as is possible with paper It is very likely that it will be necessary to develop a new technic of reading the microfilm, the same as was necessary when the paper replaced the celluloid It does not seem logical, however, that one would be able to read as many films per unit of time of the 4-by-5 size because they do require greater concentration In the case of the 35-mm film, the present plan of enlarging them through a projector places the image too far from the reviewer to be satisfactory It is possible to develop a viewer that will bring the image within the usual range.

Cost—Unfortunately, the reputed cost of the small film has been unfairly publicized, leaving

the opinion that surveys can be made at from 1 to 10 cents per film The cost of the film is but a single item in the gross cost per case x rayed in survey work, as one must consider the overhead in personnel, equipment, life of the tube, and other factors Basically, the savings in cost per case would be only the difference between the cost of a large film of any type and the small film Roughly, this might range anywhere from 20 to 50 cents per case, depending upon the type of small film used It is of considerable interest to note that at the present time an organization that is contracting for survey work with the fluorographic method is quoting a price of 65 cents per examination, which is only 10 cents less than the roll paper method under similar conditions It must be remembered that the cost in survey work has to be based on the overall expenditure for the film, its processing, and the personnel required. Thus, while I believe that very material progress has been made so far in the development of the small film, it is clearly evident that further improvements are indicated before it will be possible to accept it as comparable to existing methods At the present time it is probably better than fluoroscopy but is not yet comparable to the clearness of detail in small infiltrations as seen in the paper film—its nearest competitor

Dr Manoel De Abreu, M.D., Rio de Janeiro, Brazil—It is no longer of any novel interest to discuss whether fluorography is or is not to be used for the thoracic examination of great numbers of individuals and whether the method has or has not great value in the early diagnosis of tuberculosis There are unfortunately some who still do not appreciate the value of the systematic and periodic examination of whole populations

Though I have used this method since 1936, have examined several hundred thousand individuals by it, and am convinced of its great utility, I do not mean to contend that this technic has been perfected beyond improvement Since the low cost is its great virtue, we should not gage this method by what commercial concerns charge The profit motive does not exist in public organizations

We South Americans, since 1937, are no longer in doubt as to the utility of the method In Brazil at this moment (early 1940) we have more than forty installations for fluorography, there being ten in Rio de Janeiro, seven at São Paulo, and two to three new ones are inaugurated every month We have made more than 500,000 examinations by this method In Argentine, Uruguay, Chile, and Bolivia there also exist numerous centers of collective fluorography

some of them capable of making more than one thousand daily examinations

Fluorography, in our opinion, practically reveals all the open pulmonary tuberculosis cases, almost all cases of the progressive type, and the majority of active lesions not progressive and residual. It also shows the majority of cardiovascular affections, principally the valvular lesions and syphilitic aortitis. The fact that occasionally a case of early pulmonary tuberculosis or even a progressive lesion may not be visualized by the fluorographic examination is of no importance, because many undiscovered cases of open tuberculosis and numerous new and recent cases appear between any two periodic examinations

Teleradiography, even with the best technic, does not reveal all tubercular pulmonary lesions, yet you will concede that it is foolish to discuss at this time its value in the diagnosis of lung tuberculosis

We know that the visibility of pulmonary lesion depends not only on its size, density, and location but above all on its configuration and relative ray absorption. There are extensive lesions that do not offer contrast surfaces tangent

to the radiation and that do not show clear outlines. This is the reason why in certain cases fluorography at a short distance showed definitely a process either invisible or scarcely visible by usual teleradiography. We have also found the converse

We are sure that the existence of the majority of tubercular and cardiovascular lesions are unknown during the long period of their evolution. This state of affairs can be avoided by systematic fluorography. We think also that it is important to make the systematic chest examination by fluorography of all sick people, irrespective of the disease they suffer from. We also employ fluorography for the control and development of pulmonary and cardiovascular disease, including patients under treatment by collapse therapy.

We started a social campaign in Brazil in 1937 which had the support of the Public Health Department and such other official organizations as the departments of Education and Work and the Brazilian Army and Navy.

It is hoped that there will be no delay in the utilization of this method here in the United States where collective fluorography will find a great field of social application.

ENROLLMENT OF VOLUNTARY BLOOD DONORS

The American Red Cross acting at the request of the Surgeon General of the United States Army, has announced plans for the promotion of a nationwide corps of volunteer blood donors which would become part of the national defense program when and if needed, reports the J.A.M.A.

For the past four years twelve Red Cross chapters have been furnishing whole blood from volunteers to hospitals for civilian use. The new program will be patterned along similar lines, using plasma instead of whole blood.

A preliminary study involving 1,300 Red Cross volunteers in four cities throughout the country will be conducted under the direction of a special committee appointed by the National Research Council, including Dr. Cyrus E. Sturges, of the University of Michigan, Dr. Everett Plass, of the University of Iowa, Dr. Alfred Blalock, of Vanderbilt University, and Dr. Max Struma, of Bryn Mawr Hospital, Philadelphia.

Dr. William DeKleine, medical director of the Red Cross, has said that the proposed plan for collecting blood is patterned after the blood bank idea except that plasma will be used instead of

whole blood. Preliminary studies will be made to perfect methods of collecting, storing, and administering plasma under conditions comparable to wartime emergency. Blood for this initial study will be furnished by volunteers at the various hospitals where members of the Research Committee are regularly employed. The plasma collected will be stored and used as emergencies arise at these hospitals.

After these preliminary investigations have been completed, the Red Cross will then work out with the medical department of the army plans for enrolling prospective donors in cities throughout the country where collecting centers will be established. Blood so collected will be pooled in large sterile containers, to simplify storage, in sufficient quantities to meet the emergency needs for treating the wounded.

Recruiting donors will be conducted by a special chapter blood transfusion committee which will include leading local physicians. The technical phases of the project will be performed by the medical staff of the cooperating hospitals. They will examine the prospective volunteers and make the necessary blood tests as well as doing the actual transfusions.

SOUTH CAROLINA APPEALS FOR PHYSICIANS

The *Journal of the South Carolina Medical Association* reports that there are many small communities in that state interested in finding good doctors who will locate there. For the past two years the requests have been extremely urgent, and only recently the *South Carolina Medi-*

cal Journal carried an advertisement announcing a field open to a young physician "who had had and is inclined toward surgical experience." This opportunity may appeal to one who dislikes the rugged northern winters. South Carolina is making rapid strides in scientific medicine.

PHYSICAL DEFECTS AND JUVENILE DELINQUENCY

EUGENE W WALLACE, M D , Buffalo

IN EXAMINING juvenile delinquents for physical defects, I was impressed by the apparent fact that these children were possessed of an unusual number of defects, considering that they were brought to examination as supposedly healthy children with no complaints of ill health. I decided to review these defects as soon as I collected 200 cases. It was pointed out to me that a series of 500 cases might be more conclusive and enlightening, but I feel that I would rather subject a review of these 200 cases to criticism before undertaking a larger series.

These children were all examined by me personally at the Children's Hospital in Buffalo for the benefit of the Children's Court of Erie County. About 60 per cent were brought in from detention homes, where they had been for from one to seven days, the others were brought in by parents or relatives or came alone, at the instigation of court officials. All were concerned in juvenile delinquency of varying degrees.

To enhance the value of this study a search of the literature back to 1930 was made. Thirteen articles were unearthed through the *Cumulative Index*, but only six of these could be obtained locally, the others being chiefly in periodicals of lesser renown or circulation. Only one similar study of juvenile delinquents was found, this an investigation by Christie,⁶ who studied the records of 282 boys from the boys' department of the San Francisco Juvenile Court and then compared his findings with the records of the same number of boys from a San Francisco junior high school. Two other series of school children were available for comparison: one by Meyers,² who studied the physical examination records of 2,691 working boys in the West Side Continuation School in New York City, from the ages of 14 to 17 during the period from 1926 to 1929, along with a few selected

items from the records of 4,661 boys in a Brooklyn continuation school for the period 1929 to 1930. The other school children series was compiled by Hewitt and Geddies³ who studied 1,328 junior and senior high-school students in Rochester, Minnesota. Osgood and Trapp¹ studied juvenile delinquents from the psychologic angle, while Taylor and Schaefer⁴ studied the relation of endocrinopathies to delinquency in Wayne County, Michigan. Schley⁵ wrote a paper on the causes of delinquency that is of interest solely because the author, a psychiatrist, makes no reference in any way to the physical defects of the delinquent as of being an important or unimportant factor in the causation of delinquency.

My series comprises 166 boys and 34 girls ranging from 9 to 16 years of age, chiefly in the 13- to 16-year age group. The cases in the literature quoted are all in the same range. I have made no attempt to evaluate these cases from a mental rating standpoint, but I feel they would closely approximate the findings in 400 delinquents in the State of Massachusetts,¹ wherein a study of 328 girls and 72 boys, all delinquents from the ages of 8 to 18 years, showed the greatest number of delinquents in the 14- to 16-year age group, the whole group achieving an average of borderline intelligence, with 21 per cent boys and 29 per cent girls definitely feeble-minded.

Nationality—In this series 38.5 per cent of the children were from racial stock usually referred to as foreign, i. e., Italian, Polish, Greek, and Negro. This is not a poor showing for these races, as Erie County is composed of more than 40 per cent of these same peoples.

Height—As these children came in for examination, one striking feature was noted: often the boys were nearly as tall as the examiner, and they looked out

of place in a children's hospital. Nearly 65 per cent were above normal height standards, close to 40 per cent were well above average height, while 25 per cent were definitely at least 2 inches above normal height standards, according to Engelbach's charts.

Weight.—In view of these striking height characteristics, one turns to look at the weight records of this group with anticipation. It is found that 33 per cent of the boys and 11.7 per cent of the girls were more than 10 pounds above average, with 3.6 per cent of the boys and 8.8 per cent of the girls in the distinctly obese class. Only 1.2 per cent of the boys were underweight by 10 pounds. A comparison of the 33 per cent of boys who were 10 pounds above average weight with the 67 per cent who were above average height shows that there was closer adherence by the group to weight-age standards than to height-age standards. While the girls did not produce the unusual height record that the boys did, they were all of good frame.

Christie⁵ found very little difference in the weight characteristics between court and school children: 3.2 and 2.1 per cent, respectively, underweight and 0.7 and 0.3 per cent, respectively, obese. Hewitt and Geddies⁶ found 12 per cent underweight and 5.5 per cent overweight in the Rochester, Minnesota, high schools, and Meyers² found 19.6 per cent underweight and 1.8 per cent overweight in the New York City continuation schools. These figures tend to show that our children have better weight averages than the school and court children with whom they were compared. In fact, 85 per cent of the cases seen in this paper would merit a general description of "well developed and nourished," about 14.5 per cent the description "fair development and nourishment," and 0.5 per cent "poorly developed and nourished." In this connection it should be mentioned that Meyers² described a 3.2 per cent malnutrition in school boys, and Christie⁵ reported a 2.4 and 1.0 per cent undernourishment in court and school cases, respectively.

Freedom from Defects.—There were 3 per cent of our children found free of defects, and, if we except dental caries, another 6 per cent is found. Other court series in New York City and Boston, Massachusetts, showed from 20 to 32.7 per cent free from defects (Christie⁵ quoting Healy, and Gulick and Ayres). However, in his own series Christie⁵ found only 3.2 per cent of his court cases, but 21.9 per cent of his school series, free of defects. If those whom Christie quoted set up less stringent criteria as to what constituted a physical defect, then their higher percentages of freedom from defects would not be a favorable basis for comparison, and, if we disregard them on this supposition, then it could be stated that my series and Christie's series show that there is greater freedom from defect in school children.

Cleanliness.—Exclusive of the sexual apparatus, 10.5 per cent of the author's cases were considered unclean in body. Practically none from the detention homes were found unclean, and the probability is that if the detention group had been examined before admission to these homes the percentage of uncleanness would be higher. No basis of comparison on this point was found in papers referred to in this article.

Gross Deformities.—Gross, readily apparent, humiliating deformities were few. In my series there was one glass eye and one set of very prominent ears to be compared to the amputated left arm in Christie's⁵ series of court cases. If poor posture should be considered under this classification, then I found 1 marked case, whereas Hewitt and Geddies,³ apparently more critical, found 41.3 per cent cases of poor posture among school children, and Christie⁵ found 2.1 and 2.5 per cent, respectively, in court and school children.

We now turn to the various regions and systems of the body to note the type and incidence of defects found.

Head Region.—There were a number of diversified defects found in the head region, only those features that are outstanding from a point of view of high inci-

dence or serious import will be mentioned

Pediculosis occurred in 3 per cent of all cases (1.2 per cent boys and 11.7 per cent girls), with a higher incidence in girls. This no doubt is a higher incidence than would be found in school children. Dan-druff has a large incidence (21.5 per cent). Again this too has a higher incidence in girls, but it leaves me wondering how often it is considered a defect. The quite frequent occurrence of cerumen-plugged external auditory canals serves to remind us that some hearing defects may be quite easily remedied, although there is apparently no greater incidence of hearing defects among delinquents than among average school children. With errors of refraction definitely more numerous in delinquents (28 to 43 per cent) than school children (12 to 19 per cent), it is easy to follow Christie's line of thought when he suggested the possibility of visual impairment causing discomfort in school, followed by truancy, and the truancy leading to delinquency. While a 15.5 per cent incidence of septal deviation was found, there was no case of nasal obstruction in a debilitating degree. This should compare favorably with school children.

In noting dental caries, we see here another defect that is more prevalent among delinquents (72 per cent or more than two times the incidence in school children). Tonsils, too, are more likely to be defective in the delinquent. The number of tonsillectomies, 31.5 per cent in my series and 37.2 per cent in a school series,³ should cause one to stop for reflection. It surprised me. In commenting on Hewitt and Geddies's³ paper at a staff meeting of the Mayo Clinic, one member wondered if the incidence of lymphoid pharyngitis was not directly related to the incidence of tonsillectomy. These two series of cases had, respectively, 14 and 12 per cent incidence of lymphoid pharyngitis. In my cases the term lymphoid pharyngitis refers to the hypertrophied lymphoid tissue on the posterior wall of the pharynx that is visible through the oral cavity. Poor

oral hygiene is apparently much more common in delinquents.

The Chest.—The chest was studied in two lights: first, the tubercular aspects and, second, the nontubercular defects.

The question of pulmonary tuberculosis is not a great one in the routine examination of school and court children. However, were the examinations conducted in a case-finding effort (with routine roentgenograms, sputum examinations, skin tests, or other special means), no doubt there would be found a higher incidence of some stage of the disease in both series. It would only be a guess, and perhaps a poor one, to expect a higher incidence of tuberculosis in the delinquents. Certainly none of the consulted authors' observations nor my own indicate otherwise.

From a nontubercular standpoint, rachitic deformities are apparently of greater incidence in delinquents, 11.5 per cent of my cases and 1.4 per cent of Christie's cases,⁶ while Christie's school series showed no cases and Hewitt and Geddies's³ school series brought forth only 3.7 per cent. Beyond this, one may occasionally expect to find some other defect of the chest wall or thoracic contents but not in sufficient quantity to warrant comment.

The Spine.—The spine presented a curvature defect in 1 per cent or less cases. There were no data available regarding the spine in the series used for comparison.

The Heart.—The heart presents no great disparity in comparisons between school and court children. That this is the period of life when the loudness of the second aortic sound takes ascendancy over the intensity of the second pulmonary is shown by the data as follows: $P_2 > A_2$ in 49.5 per cent, $P_2 < A_2$ in 8 per cent, $P_2 = A_2$ in 34 per cent of the cases.

Breasts.—A study of observations in the girls examined is not worthy of much consideration beyond stating that most all the girls, from the age of 12 and over, have either mature or nearly mature breasts, with a tendency to the prominent, difficult not to notice, bust line. From

a medical standpoint these figures are not as important as they might be from the sexual delinquency consideration. Of the 34 girls examined there were 4 cases of inverted nipples, 1 case each of non-virginal and greatly hypertrophied breasts and 3 cases of pendulous breasts.

The Abdomen—In the general examination of the abdomen few defects were found. The incidence of surgical scars (65 per cent), while interesting, affords no conclusions, as they were chiefly appendectomy and herniotomy scars and one gastrotomy scar (for foreign body).

Male Genitalia—Gonorrheal urethritis was not found in any of my cases, but Christie⁶ found an incidence of 1.7 per cent in his court cases and none in his school series, while Meyers² in his school series noted a 0.1 per cent incidence. This would lead to a belief that the delinquents are more likely to obtain such an infection.

I found 1.2 per cent undescended testicles (one or both), Christie⁶ found 2.4 per cent in his court series, and Meyers² found 0.5 per cent in his school series, apparently another defect more prevalent in delinquents.

While there is no record in the reports of the authors studied as to the incidence of phimosis in school boys, it would not perhaps run from the 7 to 14 per cent mark as it does with delinquents. In my series there were better than 10 per cent of the boys who had been circumcised, this in the face of not more than 2 per cent Jewish boys.

Female Genitalia.—As there were no records at hand for the comparison of the genitalia of school girls with my court girls, we shall have to be content with the statement of the observations on the 34 girls examined in my series. Very definite evidence of defloration was found in 23.5 per cent, and from the histories this percentage can be absolutely fixed at no less than 17.6 per cent (one girl was three months' pregnant at the time of examination). No histories of abortions could be obtained, but in 2 instances the examiner suspected that there might have been. Gonorrhea was established in 3 or 8.8

per cent of the girls, and yet none of the boys in my series were found so infected.

There was no record kept as to the cleanliness of the genitals, yet I would estimate that 80 per cent of uncircumcised boys and 40 per cent of the girls presented an unhygienic condition of the genitals.

The Extremities—Study of the extremities merely brings out a few scattered defects. One rather startling matter I want to bring to your attention, however, is the difference between Meyers' report² of 3.9 per cent flat feet, and Hewitt and Geddie's report³ of 42.3 per cent defective feet (both studied large series of school children). Here, certainly, is a great difference in observation of school children. Even granting an incidence in the latter's series of phytosis, shoe deformities, and other foot defects, it is surprising to note how differently accredited authors may view and record observations of identical regions. In general, one is probably safe in assuming that school children would present as many extremity defects as court children.

The Skin.—The skin presents a variety of conditions. Acne occurred in 13.5 per cent of my cases and in 10.5 per cent of Christie's⁶ court series, but it was of lesser occurrence (less than 4.6 per cent) in any of the school series. What was true of acne was also true of other skin afflictions such as ringworm, eczema, and scabies. School children are less likely to present skin difficulties.

The Nervous System—The knee jerks, abdominal, plantar, and cremasteric (boys only) reflexes were tested in all my cases. While these children occasionally presented irregularities in response to these reflexes, no organic central nervous system lesions, old or recent, were uncovered, although no doubt some psychic deviations of no great degree were present. In other series of court children, some organic central nervous system lesions were found, while fewer such lesions were found in school children. Altogether the organic lesions in both

school and court children did not exceed 2 per cent

The Lymph Nodes—Palpating the lymph nodes in the posterior cervical, tonsillar, axillary, epitrochlear, and inguinal regions in my cases, I found that more than 80 per cent had palpable inguinal glands. Tonsillar nodes were next at 56 per cent, posterior cervical and axillary nodes next at about 45 per cent, while the epitrochlears ran a poor fifth place with only 4 per cent. In none were the glands painful or suppurating. School children have fewer palpable glands,^{2,3,6} and it can be concluded that this should be so in keeping with the generally better showing of the school children in the matter of physical defects.

The Endocrinopathies—In my series there was a 5 per cent plus incidence of endocrinopathies including hypothyroidisms, pituitarisms, and undescended testicles. I believe there would be a higher incidence of endocrinopathies found if I were more capable of recognizing the signs of endocrinopathy.

Taylor and Schaefer⁴ studied 1,106 girl and 1,205 boy delinquents in Wayne County, Michigan, and approximately 17 per cent of this group (16.7 per cent girls, 17.3 per cent boys) presented endocrine disturbances. Table 1, a portion of the data submitted by Taylor and Schaefer,⁴ shows the frequency, within the total 17 per cent, with which the endocrinopathy was assigned to the thyroid, pituitary, or gonads in both sexes.

These authors, after their study, concluded "that behavior problems are more prominent during the period of adolescence and that these behavior problems are definitely increased if the adolescent child has an associated endocrine imbalance."

Summary and Conclusions

1 A preliminary study of the physical defects in delinquents is undertaken to invite inquiry and criticism.

2 The literature that deals with this subject is comparatively scarce.

3 Delinquents have an average lower intelligence than school children and also

TABLE 1

	Girls, Percentage	Boys, Percentage
Thyroidisms	58.6	23.5
Pituitarisms	34.8	56.1
Gonadisms	8.6	20.4

have a greater number of physical defects. This is in keeping with a study by Kempf and Collins⁸ who found that the lower the intelligence quotient in school children, the greater the number of physical defects.

4 Delinquents are more physically matured than the average school children, and the child who presents a physique in advance of his years requires extra supervision to keep him from delinquency.

5 The general hygiene of delinquents is comparatively poor. This perhaps accounts also for the greater number of physical defects and could be linked with both lowered mentality and the same lack of supervision that allowed the delinquency to occur.

6 There should be greater conservatism in the performance of tonsillectomies.

7 It is of importance that our medical schools teach, in a uniform manner, the subject of the physical examination and the recording of physical observations so that the disparity found among investigators may be obviated in the future.

8 Lymphadenopathies without other positive findings are merely a reflection of poor physical hygiene and by themselves are not pathognomonic.

9 The pediatrician and general practitioner should be trained to recognize endocrinopathies in the preschool child, and the school physician in the school child, so that these may be under control at the time of adolescence.

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THE RESPONSIBILITY OF THE PEDIATRICIAN IN REGARD TO CHILDREN'S EYES*

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THE responsibility for children's eyes falls on the pediatrician, and it is to him that the mother or nurse first turns for aid and advice. There are certain definite things that medical men should know about the eyes of their patients. They are first and foremost, a determination of the visual acuity of each eye and the two eyes together, second, presence of any external disease such as, granulated eyelids, conjunctivitis, etc., third, whether the eyes are crossed or not, fourth, presence of an internal disease or defect by the use of the ophthalmoscope, fifth, the effect of lighting and posture, sixth, reading problems and sight conservation.

Visual Testing

The most important factor in the examination of the eyes of infants or children is an estimation of the visual acuity of each eye. It is not always possible to determine the vision accurately, but an attempt should be made in every case. Numerous methods have been devised, but the simple and less cumbersome tests are ideal from a pediatric point of view.

In the case of infants a flashlight will determine the presence of vision by pupillary reactions and movement of the eye in the direction of the light. This may be supplemented by small brightly colored objects, such as small marbles or a white-headed pin. The test object should be held in one hand and the eyes covered alternately with the other hand when near vision is tested. To examine for distance it is useful to cover one eye with a patch and place a marble or ball at 10 or 20 feet. If the child sees the object and goes after it, the vision may be estimated in relation to the size of the object. All that is needed to make a visual test of an infant is a small flashlight, two or

three marbles of varying sizes, a white-headed pin, and an ordinary eye patch.

The Snellen "E" test cards are the most accurate for testing children who do not know the alphabet. The child simply indicates with his hand the direction of the "legs" of the "E". The smallest symbol recognized at 20 feet is the degree of vision. Picture charts are quite useful, as are certain more complicated mechanisms such as stereoscopes, etc. Letter and number charts may be used for older children.

Once the vision is estimated, the question of eyestrain arises. If a child has normal vision, or 20/20 in each eye, it is possible that he may have eyestrain. It may be caused by astigmatism, farsightedness, nearsightedness, or improper muscle coordination.

The emmetropic or normal eye from a refractive standpoint is one in which parallel rays of light are focused sharply on the retina. The hyperopic or farsighted eye is shorter than normal, and parallel rays of light are focused behind the retina. A convex lens is needed to bring the focus to the retina. A myopic or nearsighted eye is longer than normal, and the focus is in front of the retina. A concave lens is needed to move the focus to the retina. In simple astigmatism due to the curvature of the cornea or lens, horizontal rays may be focused in front or behind the retina and vertical rays on the retina. A cylindrical lens is used to correct this condition. If objects are not clearly focused on the macula lutea, it is impossible to get well-defined images. Properly prescribed glasses with the use of dilating drops will correct most cases of blurred vision and insure development of good visual acuity. If a child has a large refractive error that is not corrected, it is possible that he may go through life with such poor vision that he will be a

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burden to his parents and to the community. He may become maladjusted or a "problem child."

All children should be examined under cycloplegic by an eye physician before entering school. Despite normal vision and the negative appearance of the eyes, a child may suffer such eyestrain that his progress is impeded. It is part of the pediatrician's responsibility to see that such examinations are made before the school age.

External Examination

Very little equipment is required for the external examination of the eyes. A flashlight and a cotton applicator is all that is needed. The applicator aids in evertting the upper eyelid. The presence of conjunctival lesions may be determined quickly. The light may be used to examine the cornea, iris, pupillary reactions, and crystalline lens.

Presence of Crossed Eyes

A simple test for crossed eyes may be made by flashing a light into the eyes at a distance of 15 or 20 inches. If the eyes are straight, the corneal reflexes will be in the center of the pupils. If the eyes are fixed on the light. Another test may be made by having the child fix an object in the distance and alternately covering the eyes with the palm of the hand. If the eyes are straight, there will be no movement toward the fixation point of the eye that has just been uncovered. The test should be repeated for 13 inches, because the eyes may be straight for distance and crossed for near. If the pediatrician finds that the eyes tend to cross or actually squint, he should lose no time in having an examination with cycloplegia by a competent ophthalmologist. Properly fitted glasses may arrest the condition. The refractive error should be known and corrected before a child is given such treatment as exercises, occluders, or mydratics. Glasses are often given to infants at the age of one year with splendid results. The ophthalmologist is extremely anxious to develop good central vision as early as possible. If a

child has a large refractive error, proper glasses should be prescribed and worn. They may be discarded later if good binocular single vision is attained.

Use of the Ophthalmoscope

Pediatricians, as well as general medical men, should know the basic principles of the ophthalmoscope. An attempt should be made to examine the eye grounds in every case. If this is done routinely and as faithfully as the ears and throat are observed, valuable information may be ascertained. It is difficult in many cases to get a clear picture of the fundus with an undilated pupil. If the room is darkened and the intensity of light from the ophthalmoscope is reduced, a better picture will be obtained. By using a plus 10 or 12 lens, any gross defect of the crystalline lens may be seen. Rotating the lenses backward to zero gives a view of the vitreous body, retina, and optic nerve. Should the pediatrician see such gross defects as cataracts, large vitreous opacities, retinal hemorrhages, or swelling of the optic nerve, it would be wise to consult with an ophthalmologist at once. If cataracts are permitted to remain very long, the development of good vision is most unlikely. Retinal hemorrhages and exudates and optic neuritis should receive careful study by both the ophthalmologist and the pediatrician.

Lighting and Posture

The physician should be able to advise parents and teachers about proper lighting and posture. It is believed by most authorities that indirect lighting is superior to direct when daylight is not available. It is conceded that a soft light without glare or shadows is best if the intensity is adequate. The amount of light required varies with the individual. One person will require only from 7- to 10-foot candles, whereas others need as much as 12 or more. If the light is direct, it should come from above and the left. Most schoolrooms are designed so that daylight comes from above and the left, or a system of indirect illumina-

tion is used. Modern schools are equipped with adjustable chairs and desks which prevent many postural defects. It has been known for a long time that reading in bed in a reclining position strains the external ocular muscles. Reading on the floor in poor light or writing or studying at a desk too low or too high strains the eyes and may cause pains in the back of the neck or head. Poor reading habits may retard a child's progress in school work, and it is important that lighting and posture are corrected early.

Reading Problems and Sight Conservation

Reading problems are observed, sometimes, in children with normal vision and muscle balance. The child may be slow or have to rescans a part of a line of print to appreciate the meaning. He may stumble over comparatively easy words. An instrument has been devised that measures the reading speed with a modified movie camera. The time required and the number of regressions are accurately recorded on a film. From these observations, steps may be taken to improve reading ability by means of properly fitted glasses, orthoptic training, and use of the metronoscope, which is an instrument designed to increase speed and ability in reading. Cases of "mirror writing" frequently show signs of stuttering, and, if the history is taken carefully, it may be found that the child was changed from left handedness to right handedness in infancy. In complicated cases the combined ingenuity of the pediatrician, ophthalmologist, psychia-

trist, and "teacher-psychologist" is needed to overcome the handicap.

Sight conservation in visually handicapped children has been studied carefully by Mrs. Winifred Hathaway,¹ associate director of the National Society for the Prevention of Blindness. Through her efforts and with the aid of leading ophthalmologists many "sight-saving" classes have been established in the schools. These classes include children with a corrected vision of 20/70 or less in the better eye and those with progressive eye lesions. They are subject to regular ophthalmologic examinations, taught by specially trained instructors, given manual training and books with large, clear print, and housed in rooms with ideal lighting and hygienic surroundings, according to Berens and Hathaway.² Children who have recently undergone an eye operation or recovered from an acute infectious disease that has affected the eyes should be included in temporary "sight-saving" classes.

In conclusion, may we emphasize the importance of good visual acuity, absence of external diseases and squint, freedom from internal diseases, the effect of lighting and posture, good reading habits, and sight conservation. Pediatricians should recognize obvious eye difficulties and guide their patients accordingly.

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FIRST WEEK OF LIFE HAZARDOUS

The first week of life still remains almost as hazardous as it was in 1916, despite the fact that the death rate of infants under 1 year of age in the United States has been reduced by more than half since that time, William I. Fishbein, M.D., Chicago, declares in *Hygeia The Health Magazine*. "Since 1916 the death rate of infants under 7 days of age has been reduced only 10 per cent," he says. "Obviously our efforts to save life in infancy may now well be focused particularly on this group." Diseases of early infancy and malformations present at birth constitute the seventh most frequent cause of death in this country, accounting for 61,444 deaths during 1938.

COMPULSORY SERVICE OF PHYSICIANS

The British government is taking measures to ensure that hospitals and other medical services shall be adequately staffed with physicians. The Emergency Powers Act gives power to direct physicians to perform such services as may be specified, says a London letter to the *J. A. M. A.* For the present the application of the act will be confined to physicians within two years of becoming qualified. This power will be exercised by the senior officers of the Ministry of Health in which they will be advised by the central medical war committees of England and Wales and of Scotland. These committees already advise on the medical recruitment of the armed forces.

INFREQUENCY OF TOXOID REACTIONS IN 11,326 SCHOOL CHILDREN*

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DURING the last few years New York City has had a high incidence of diphtheria cases among school children, particularly among those under 10 years of age. In order to control diphtheria among the school population, an immunization program was planned for public and parochial school children below the 5A grade. The children, with few exceptions, were under 10 years of age. Some, however, in the 4B grade proper, were 11 years old. This is a report on the work done in the Washington Heights and Riverside districts between December, 1938, and March, 1939.

Information was obtained of the status of immunization of children below the fifth grade in the 41 schools of the two districts. These children were divided into two groups. The first group included children whose record did not indicate previous immunization. The second group consisted of children who had been immunized three or more years previously. Children who had been examined by private doctors and those whose parents preferred immunization by their own physicians were not included in this program. Efforts were made to contact those doctors, informing them of the necessity for immunization, whenever indicated, of children under their care.

The plan as finally decided upon was to give two inoculations of $\frac{1}{4}$ cc and 1 cc of toxoid two weeks apart to those who had no record of previous immunization. If, after the first inoculation, the child developed a reaction, the second injection was the same as the first, $\frac{1}{4}$ cc, and a third injection was advised, the amount of the third injection depending on the reaction, if any, to the second inoculation. In view of the fact that a number of children

gradually lose their immunity after three or more years, it was felt advisable to give a supplementary injection of 1 cc of toxoid to the children in the second group, which included those who were inoculated three or more years previously†.

Diphtheria toxoid has been used in the city for a number of years for infants and preschool children—first, because the toxoid does not contain any serum and thus there is less danger of a reaction, and, second, because only two injections† have to be administered instead of three, as with the old toxin-antitoxin. The antigenic properties of toxoid, presumably, were as good as, if not better than, those of toxin-antitoxin.

Though diphtheria toxoid has no serum, local and even general reactions were, however, observed, particularly in children of the older age groups. Children who manifested reactions might have been sensitive to either the diphtheria bacillus, the protein of the bacillus, or both. Underwood¹ administered the Moloney test to children of various age groups to determine their sensitivity to diphtheria toxoid. He observed that fewer than 3 per cent of children under 5 years of age had a 2 plus or 3 plus positive reaction. The Moloney test was positive in almost 10 per cent of children 7 years of age, and the percentage of positive tests was increasing with age. In the 14-year-age group the Moloney test was positive in 43 per cent of the cases. Underwood maintains that a toxoid sensitivity is probably an allergic condition due to pre-

† Since making this analysis procedures for diphtheria immunization have been changed. The following are the recommendations for children on admission to school:

- A. Three injections of toxoid at monthly intervals if not previously injected.
- B. One injection of toxoid $\frac{1}{10}$ to $\frac{1}{15}$ cc, if injected more than one year previous to admission, unless a Schick test made within one month prior to admission is negative.

vious contact with the products of the *Corynebacterium diphtheriae* resulting either from the harboring of the organism or from previous artificial immunization. Zinsser and Bayne-Jones² recommend that diphtheria toxoid should be used in young children only, while in older children the degree of sensitivity should be determined by the Moloney test. Fro-bisher³ is of the opinion that the reactions may be due either to the toxoid itself, to the protein of the peptone solution, or to the protein of the bacteria cells. Jensen⁴ believes that the ordinary local and general reactions are due to a nonspecific antigen. According to the same author, the more pronounced reactions, both local and general, are due to a high sensitivity to the specific antigen. According to his study, the reactions from diphtheria toxoid were twice as frequent in those who had had diphtheria previously as compared with those who never had had the disease.

To perform a Moloney test on the thousands of school children under 10 years of age before administering toxoid inoculations would have proved an impossible task for the New York City Health Department. The fact that the Moloney test is not an accurate index of the liability to, or severity of, the reactions to be expected is another point to be taken into consideration.⁵ The physicians who inoculated children in schools were aware, however, of the possibility of reactions occurring immediately upon administering the injection and also of the local and general reactions that might follow. Whenever parents were present during the injections, they were advised by the nurses of the possible reactions, and, in case of a severe reaction such as extreme swelling of the arm or a high temperature, the parents were to communicate with the school and a physician would be sent to their homes to examine the child. Two or more visits were made when the temperature at the first visit was over 102 F or when, in the opinion of the physician, a follow-up visit was indicated.

This report deals with the types of reactions observed by physicians who vis-

ited the homes. It may be stated that reactions other than those reported might have occurred and that the school nurses of our office were not informed. I think that it is fair to assume, though, that such cases were few in number and probably not severe in character.

The reactions observed were classified into three groups—i.e., the mild reaction, consisting of a slight swelling, redness, and no temperature or a temperature under 100 F, moderate reactions, those where there was a more extensive inflammation, swelling of the axillary glands, and a temperature of 102 F, and severe reactions, those with a very extensive inflammation extending down to the elbow, enlargement of the axillary glands, a temperature of 103 or 104 F, headache, and vomiting. Under severe reactions we also included reactions that occurred immediately after the injections were administered.

In cases where a home visit was made, the teacher's record was checked to determine the number of days the child was away from school. That, however, was not a criterion of the degree of reaction, because, in many instances, children with slight reactions stayed away a long time due to subsequent ailments such as a cold, tonsillitis, or other conditions. It must be remembered that during the period from December through February children's ailments are frequent, and many stay away for one reason or another.

Between December, 1938, and March, 1939, 11,326 children were inoculated in the schools of the two districts. Of these, 6,822 children who had been inoculated three or more years before received a supplementary injection of 1 cc of diphtheria toxoid. The balance (4,504) were children who had no record of previous immunization and, therefore, received two injections.

Forty-five children were visited by school physicians during the above-mentioned period. Twenty-two of these children had received a supplementary injection, while 23 children had no record of previous immunizations and thus received two injections of $\frac{1}{4}$ cc and 1 cc.

TABLE 1—REACTIONS OBSERVED IN 6,822 SCHOOL CHILDREN WHO RECEIVED SUPPLEMENTARY INOCULATIONS OF DIPHTHERIA TOXOID (Tabulated According to Age)

Age	Type of Reactions			Total
	Mild	Moderate	Severe	
6		2		2
7		1		1
8	3		1	4
9	7	2	1	10
10	1			1
11		1		1
Unknown	1			1
Total	12	6	2	20

Of the former group of children visited, 2 did not have any evidence of a reaction. One had an acute bronchitis, and 1 suffered from influenza. Thus, of the 6,822 children who received a supplementary injection, 20 or less than 0.3 per cent developed a reaction that necessitated a home visit. The ages of the 20 children are indicated in Table 1.

It is rather interesting that 10 or 50 per cent of all the children in this group who reacted were 9 to 10 years of age. Unfortunately, all children who were immunized were classified according to grade and not according to age. But, from our knowledge of the ages of children in the grades from kindergarten through the fourth year and of the grades in which children were at the time of their immunization, we estimated the age distribution of the immunized children to be as shown in Table 2.

TABLE 2—ESTIMATED AGE DISTRIBUTION OF IMMUNIZED CHILDREN AND NUMBER OF REACTIONS IN EACH AGE GROUP

Age	Supplementary Injections		Two Injections	
	Estimated number	Number of reactions	Estimated number	Number of reactions
	(1)	(2)	(3)	(4)
Under 6	804	0	515	0
6	1,408	2	915	0
7	1,534	1	1,010	2
8	1,635	4	1,083	7
9	1,120	10	763	3
10+	321	3	218	5
Total	6,822	20	4,504	17

Of the 20 children who developed a reaction following a supplementary injection, 10 were between 9 and 10 years of age. Is that high figure of statistical significance? That can be determined by the formula $\chi^2 = \frac{E(T - O)^2}{T}$ where T indi-

cates the theoretical figure, O is the observed figure, and E signifies the sum of all values. Applying this formula to the data in Table 2 we obtain a value of χ^2 of 23.7. When this is compared with Pearson's table, it is noted that $P < 0.01$ where n equals 5, or the probability of such a distribution occurring by chance would be less than one in a hundred. Careful analysis of each cell reveals that the age group 9 to 10 contributes 13.6 to the sum total of 23.7. The number of reactions occurring in age group 9 to 10 is therefore, of statistical significance.

Analysis of the intensity of reactions revealed the following facts: 12 children had a mild reaction, 6 a moderate reaction, and 2 a severe reaction. One 7-year-old child and 1 child 9 years old who had a moderate reaction also had influenza, and it was difficult to ascertain whether the temperature was due to the toxoid or to the complicating influenza.

One child, aged 9, had a temperature of 104 F and a marked axillary adenitis. The child had previously been immunized in 1931. The temperature remained high for one day and came down to 101 F the following day.

The other child classed as having had a severe reaction was 8½ years old and developed a general reaction immediately on inoculation. Two-tenths cubic centimeter of adrenalin was administered, and the child was sent home. A nurse who visited the child subsequently reported no untoward manifestations.

Of the 23 children visited after the first or second primary inoculation, 6 showed no evidence of a reaction. Four of the children had the grippe, 1 had an infection of the upper part of the respiratory tract, while 1 had scarlet fever. Thus, only 17 children, or less than 0.4 per cent of all children who received primary inoculations, were visited for manifestations of either local or general reactions. Eight children developed a reaction following the first injection of ¼ cc, and 9 children developed a reaction following the second injection of 1 cc.

Analysis of the rate of reaction in children who received two injections re-

TABLE 3—REACTIONS OBSERVED IN 4504 SCHOOL CHILDREN WHO RECEIVED TWO INOCULATIONS OF DIPHTHERIA TOXOID
(Tabulated According to Age)

Age	Following First Injection—			Following Second Injection—			Grand Total
	Mild	erate	Severe	Mild	erate	Severe	
6							
7			1				1
8		2			2		4
9	2		1				3
10				1	1		2
11	1	1			1		3
Total	3	4	1	4	3		17

veals the following. No child under 7 years of age developed a reaction following the first or second primary inoculation. Of the children who were 8 years of age, 7 were visited for a reaction. Three children were 9 years old and 5 were 10 years old or more (Tables 2 and 3). Applying the test of χ^2 for significance, the value of χ^2 is 30.4 with $n = 5$. The probability of such a distribution being that of chance is less than one in a thousand.

Here, too, it is observed that the age group of 10 and over contributes 22 to the total value of χ^2 and the age group under 7 contributes 5.4. We may therefore conclude that there is a significance to the number of reactions occurring in children 10 years and over as well as to the absence of reactions in children 7 years and younger.

Analyzing the intensity of reactions it is noted that 7 children had mild reactions, 9 had moderate reactions, and 1 had a severe reaction. The condition of 2 children, 8 years old, who had moderate reactions was complicated by acute pharyngitis, and 1 child, 11 years old, had an acute sore throat. Thus, it is possible that the temperature and discomfort associated with the sore arm might have been due, in great part, to the infection of the upper part of the respiratory tract. The child with a severe reaction was 9 years old. She developed a temperature of 103 F on the day following the first injection of $\frac{1}{4}$ cc. The arm was red, swollen, and indurated, and a rash broke out over the entire body. The child was visited for three consecutive days and had a temperature of 100 F the last day visited.

No surgical interference was necessary in any of the cases reported. Not one of the 11,326 children immunized developed an abscess.

Summary

1 From December, 1938, through March, 1939, 11,326 school children from kindergarten through 4B, 6 to 11 years old and attending schools in the Washington Heights and Riverside districts, were immunized against diphtheria. Of these, 6,822 children who had been immunized three or more years ago received a supplementary injection of 1 cc of diphtheria toxoid. The balance (4,504) were children who had no record of previous immunizations and, therefore, received two injections of diphtheria toxoid of $\frac{1}{4}$ cc and 1 cc two weeks apart.

2 Forty-five children were visited by school physicians for "reported" reactions to diphtheria toxoid. Eight out of these 45 presented no evidence of a local or general reaction.

3 Twenty children, or fewer than 0.3 per cent of the total who received a supplementary injection, developed a reaction ranging from mild to severe in character. Seventeen children, or less than 0.4 per cent of those who received two injections, developed local and general reactions following the first or second injection. Only one of these reactions was severe.

4 None of the children developed a localized abscess or any other complication that required surgical interference.

5 Of the children who developed a reaction following the supplementary inoculation, 50 per cent were between 9 and 10 years of age. Of those who developed a reaction following the first or second primary inoculation, 30 per cent were 10 years of age and older. The greater frequency of reactions in these age groups is of statistical significance.

Conclusion

In our experience with the administration of diphtheria toxoid to school children no alarming reactions were observed. Presumably, administration of diphtheria

toxoid is not associated with any danger even when given in amounts of 1 cc. Reactions in children 9 years of age and over are more frequent than in the younger age groups. While the Moloney test may be indicated in some cases, one fails to see its necessity in mass immunizations of school children, recognizing that the reactions requiring home visits oc-

curred only in $\frac{1}{3}$ of 1 per cent of those inoculated.

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NEW TREATMENT HIGHLY SUITED FOR WOUNDS OF MODERN WARFARE

The closed method of treating compound fractures and infected wounds by the application of plaster-of-paris casts is particularly suitable under the conditions of modern warfare with its numerous civilian casualties from aerial bombardment, the *J A M A* for Sept. 14 points out in an editorial.

In contrast to use of chemicals to kill the bacteria which was employed during the war of 1914-1918, the closed plaster method is based on the principle of rest for the injured part and on the ability of the body to resist bacterial infection. This principle, introduced after the first World War by Baer, of Baltimore, and Dr. H. Winnett Orr, Lincoln, Neb., was tested by Orr in the use of the closed plaster method in civilian practice. He obtained good results with the method in from 85 to 90 per cent of compound infected fractures.

"The essential feature of the method is the complete immobilization of the soft tissues," the editorial says. "No attempt is made to kill the organisms by external agents. The reliance is placed entirely on the ability of the body to resist bacterial infection."

"The first large-scale experiment in the application of these principles was made possible in the Spanish war. There, chiefly owing to the enthusiasm of J. J. Trueta, chief surgeon of the General Hospital of Catalonia, the method was adopted in the medical service of the republican army. The total number of cases treated was 20,000. The incidence of gas gangrene and of other infections fell so definitely that foreign surgeons who came to Catalonia at the later stages of the war were led to believe that the soil of Spain contained no anaerobes (microorganisms which can live without air)."

"The method, as described in Trueta's recent monograph, is carried out in the following manner: Surgical treatment is undertaken as soon after occurrence of the fracture as possible, with the patient anesthetized, thoroughly wash the entire extremity and the wound with soap and water and a nail brush, shave all hair, and paint the surrounding skin with a weak solution of iodine, excise the skin edges of the wound, remove all contused (bruised) tissue and widen the wound, excise carefully and unhesitatingly all nonviable (not capable of living) muscular and cellular tissues, open up the neighboring cellular surfaces affected by contusion always keeping in mind the need for adequate drainage,

remove all foreign material, reduce (restore to normal) the fracture by traction on an orthopedic table, dress the wound with sterile gauze and immediately immobilize with plaster including the two adjoining joints if possible. The plaster is applied, according to the method of Bohler, directly to the skin, only the bony prominences being padded, administer 3,000 units of tetanus antitoxin. It is not permissible to cut a window in the cast, since this deprives the soft tissues of much needed immobilization. 'It can be observed,' says Trueta, 'that the tissues swell into the gap in the plaster and their healing power is correspondingly weakened.' This is in essence Orr's treatment with a single exception, namely, that Trueta employs dry gauze as dressing for the wound instead of Orr's petrolatum pack. The plaster is left in position as long as the smell is not excessive and the plaster has not become soft and wet. It may be left in position for from four to six weeks and then replaced and left in position until such time as the fracture has healed.

"In Trueta's own material there were 1,073 cases of compound fractures of the limbs, most of them war wounds. There were 6 fatalities, 976 good or satisfactory results and 91 poor results. Trueta expresses the belief that no other treatment could have enabled them to alleviate for so many victims the horrors of war and air raids. Dr. Rudolph Matas, who had an opportunity to observe the method in the Catalan war zone, writes: 'I had an opportunity to see several plaster encasements removed from arms and thighs after they had been in situ (position) for from fifteen to twenty-one days. The stench of the soiled encasement was nauseating. A magma or mush of decomposing pus and wound secretions covered the surface of the wound under the plaster bandage. But after washing this off with warm water and soap, and when the packs were removed, I was surprised to see the excellent, healthy, pink, well granulated appearance of the wound coupled with a very satisfactory condition of the patients—no fever, no pain, good appetite. This was indeed a revelation I did not anticipate.' Matas quotes Dr. Jiménez, of Banolas, under whose direction there were treated 6,000 fractures, of which 500 were fractures of the femur, with a mortality for the total group of 3.2 per cent. There was only 1 case of gas gangrene and this one had appeared before admission to the hospital."

REPORT OF INTENSIVE LABORATORY STUDIES OF HIGH-SCHOOL ATHLETES

LEE S PRESTON, M D , Oneida, New York

(Public School Physician, Oneida)

IN MAKING the physical examinations of candidates for the various athletic teams of the Oneida High School in the past, I have confined myself to the usual routine and general physical examination of these students. These examinations have been thoroughly done in all cases, I believe, and were decidedly better and more complete than the annual physical examinations of the general student body. They included a complete examination of the eyes, ears, nose, mouth, teeth, and throat, and also of the heart, chest, and abdomen, a blood-pressure reading, a cardiac reserve test, an inspection of the inguinal, scrotal, and rectal regions, and of the extremities and feet, and finally weight and measurements. These examinations met with the approval of and were accepted by the insurance company, which annually issues a group insurance policy to the school against injuries that students and players may receive while engaged in class or contest games. No request was made by the insurance company for urinary examinations, and my physical examinations had not included a urinalysis of these students at any time.

Postexamination Findings

In the fall of 1939, the insurance company requested, for the first time, an examination of the urine of all candidates for the various athletic teams of the school and asked for a determination of albumen and sugar in addition to the regular and specified physical examination. Because of the pressure of other matters, I did not make this physical examination of the candidates for the football team at the opening of the school year, as had been my practice in the past, but postponed it until the third week after the opening of the school year in

September. In the meantime, the coach of the football team had called for candidates for that team and had "run off" a few hours of light practice scrimmage with the full squad, which consisted of 36 boys in the second, third, and fourth years of high school. No actual intramural or interscholastic games had been played during that time. Some of these candidates were reporting for football for the first time, but many of them had played for one or two years previous to this season. I made the usual full physical examination of all of these candidates and accepted those as playing members of the teams, who were found to be free of any physical defect or disability that might be incompatible with or increased by the vigorous work of the football season. At the completion of these physical examinations, I secured a specimen of urine from each member of the squad, according to the demands of the insurance carrier. These specimens were collected on the same day and at the same hour, which was immediately upon returning to the school gymnasium after practice scrimmage in the afternoon. These specimens were given a full urinary examination at my office, and I was surprised to find that albumen was present in the urine of six members of the squad of 36 players. Albumen was not present in the urine of any other member of the squad at that time. Being rather astonished and quite impressed by this finding, I secured second specimens of urine in a like manner from the six members of the squad, who had albumen in the first examination. Albumen was found to be present in like amounts in the second specimens of these candidates, and casts, red blood cells, and leukocytes were seen by microscopic examination. At that time, realizing that I had met

with a finding that might prove to be interesting and valuable by further study, I prepared an organized plan and arranged for regular and systematic urinary examinations of a few selected members of the football team throughout the entire season

Selection of Test Cases

As I did not wish to be biased or influenced in any way in my work, I arranged with Dr R L Crockett, director of the Madison County Bacteriological Laboratory at Oneida, New York, to make these urinary examinations and studies at his laboratory. Fifteen members of the full playing squad were selected to act as "test cases." This study was limited to that small number, because the laboratory was unprepared to examine thoroughly and carefully urinary specimens from the full squad of 36 players upon so many occasions during the football season. Some of these selected players were members of the first team, and other members were from the second team, but none were selected from the reserves or the third team, because the members would be unlikely to play in any scheduled game and would be subjected to less severe scrimmage practice throughout the season. Coach Fred O Duncan of the Oneida High School selected the players for this study and chose those members of the squad, who would be most likely to engage in the heaviest form of scrimmage and play in a majority of the games throughout the season. All members of the squad, who were found to have albumen in the first urinary examination, were placed on this selected list, and 9 other members of the squad, who were found to be albumen-free at the first urinary examination, were added to this list to make a total of 15 playing members for this study.

Method of Examination

Specimens of urine were collected from all of these "test players" throughout and after the season, and a total of three hundred single specimens were examined

during this time. These specimens were collected under one of the following conditions for each test: (1) immediately before a game, (2) immediately after a game, (3) Monday after a game on the previous Saturday and following a rest period of two days, which included Sunday and Monday, (4) during the week and after scrimmages on the field. Specimens were secured in this manner throughout the entire season. On some weeks the specimens were secured before and after a game, and others were taken after a game and upon the following Monday after a rest period over the week end. In some instances, they were secured during the week of scrimmage and after the game at the end of that week. Specimens were selected in this manner so as to provide a "check-up" on the urinary findings under the various and different periods of the football season. These specimens were immediately taken to the laboratory and examined at once, always by the same laboratory technician and under the same laboratory conditions. Each player was given a full initial urinalysis, but all subsequent urinary examinations were limited to the presence or absence of albumen, the amount of albumen, if present, the specific gravity, and a full microscopic examination, which covered particularly the presence or absence of casts, red blood cells, and leukocytes. The Purdy method of albumen estimation was used at all times and was performed as follows. A graduated Purdy test tube was filled with clear urine to the 10-cc mark. Two cubic centimeters of glacial acetic acid and 3 cc of a 10 per cent solution of potassium ferrocyanide were added to the urine. This was shaken thoroughly and well, and was allowed to stand from two to five minutes. It was then centrifuged until the coagulated albumen had packed well into the bottom of the test tube. The volume of the precipitate was read off on the graduations of the test tube, each 0.1-cc mark representing 1 per cent of albumen. When the amount of albumen was excessive, the urine was diluted until the volume of the precipitate

fell below the 1.5-cc. mark, and the result was multiplied by the dilution. Each specimen was centrifuged in a large electric centrifuge that revolved at a fixed and constant speed for ten minutes, and the albumen content was determined in this manner. In order to have a constant and fixed study of the sediment for microscopic examination of all specimens, the technician withdrew the supernatant urine in the centrifuge to the amount of 1 cc and thoroughly mixed the sediment in the bottom of the test tube with the remaining urinary fluid. The microscopic examination was made with a "drop specimen" on a glass slide with a cover slip. It was believed that the constancy of the centrifuging procedure and the dilution of all sediment in the test tube to a constant and standard amount as described above would produce a fixed standard for the albumen and microscopic analyses. The number of casts and red or white cells were estimated in amount per high dry field magnification.

Review of Findings

The following is a résumé of our findings. The albumen content in the urine of the selected members of the football team, who showed albumen in any amount at any time, ranged from 0.5 to 6.0 per cent, with a mean average of 1.1 per cent throughout the season. The albumen persisted in varying and changing amounts in the members of the selected group of football players throughout the entire season, and three members of the selected test group showed albumen at no time during the full season. The albumen percentage was persistently higher after scrimmage and games, and it was lower or entirely absent upon rest days after games and before scrimmage of the next week. The albumen content was greater after the heavier and strenuous games, when few or no substitutions were used, and was less after the lighter and easier games when many substitutes played in the game. Casts of the hyaline and granular types were present in large amounts with the albumen, but no casts were seen in those specimens that showed

no albumen. Red blood cells were present under the same conditions, and a few leukocytes were seen in those specimens that contained casts and red blood cells. The specific gravity varied from 1.020 to 1.030. Finally, all findings—albumen, casts, red blood cells, and leukocytes—disappeared after the conclusion of the football season with the exception of 1 player, who had 2.0 per cent of albumen at the last examination made two weeks after the end of the season.

I regret that specimens of urine were not obtained from the members of the football squad at the opening of the school year and previous to the commencement of football scrimmage. However, all accepted members of the team were found to be in good and fit physical condition at the time of their examinations, and I have no reason to believe or feel that any member of the squad had albumen in the urine previously. When this work is repeated in the next year, a full and complete urinary examination will be made of all members of the squad at the time of their physical examination and before engaging in any scrimmage or practice games. This will prevent any student who is known to have albumen from becoming a member of the squad and will make a report of our observations less vulnerable to criticism.

Becoming quite interested in these observations among the members of the football team, I arranged for a similar study upon 8 playing members of the basketball team during the months of January, February, and March of this same school year. The findings in the case of the basketball team were not materially different from that of the football team, except that the amount of albumen and casts was less in the case of the basketball team (1.0 to 3.0 per cent, with a mean average of 0.9 per cent throughout the entire season). As in the case of the football team, it was found that one member of the basketball squad showed 0.5 per cent albumen in the last urinary examination made four weeks after the end of the season. It is interesting to

with a finding that might prove to be interesting and valuable by further study, I prepared an organized plan and arranged for regular and systematic urinary examinations of a few selected members of the football team throughout the entire season

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As I did not wish to be biased or influenced in any way in my work, I arranged with Dr R L Crockett, director of the Madison County Bacteriological Laboratory at Oneida, New York, to make these urinary examinations and studies at his laboratory. Fifteen members of the full playing squad were selected to act as "test cases." This study was limited to that small number, because the laboratory was unprepared to examine thoroughly and carefully urinary specimens from the full squad of 36 players upon so many occasions during the football season. Some of these selected players were members of the first team, and other members were from the second team, but none were selected from the reserves or the third team, because the members would be unlikely to play in any scheduled game and would be subjected to less severe scrimmage practice throughout the season. Coach Fred O. Duncan of the Oneida High School selected the players for this study and chose those members of the squad, who would be most likely to engage in the heaviest form of scrimmage and play in a majority of the games throughout the season. All members of the squad, who were found to have albumen in the first urinary examination, were placed on this selected list, and 9 other members of the squad, who were found to be albumen-free at the first urinary examination, were added to this list to make a total of 15 playing members for this study.

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THE SCHOOL PHYSICIAN AND THE CARE OF THE ATHLETE

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(*City Health Officer*)

THE policy of the school physician in respect to the care of athletes varies as to locality and allotted time, as to his own hobbies and interests, and as to the attitude of the coach with whom he is working. There is also a variance of opinion as to the allocation of duties to the physical educator, coach, or physician. In some instances one makes up for the shortcomings of the other to supply a fairly adequate care, but in a few instances perhaps both shirk that duty with a resulting sad fortune for the athlete.

In this discussion may I assume the school physician to be responsible for the policy and the supervision of those functions necessary for an adequate program of care for the athlete. I hope that my remarks will be of some aid in establishing a policy that shall be practicable and within the means of a large majority of schools competing in athletics, with the understanding that each school desires to place in sports a team capable of upholding the standard of that school, winning its share of games, demonstrating a spirit of good sportmanship, and proving to the public that such competition is going to improve the physical and mental condition of each of those competing.

The cooperation of the parent, nurse, teacher, coach, and doctor is necessary in securing proper care. The parent must give consent for participation and in so doing assume the responsibility of any injury that may arise from such. It is also the parents' duty to insist that if their child is to participate that the best possible care be given on the part of the school and to assist with that care at home. In relation to the parent the school physician's duty is one of education.

The day of a game some boys will, though ill, return to school so that they may participate. The nurse or physician

in those systems that require permission from the medical office before return to school after illness, will, in examining this boy, appreciate his folly and insist that he return home, thus saving him prolongation of his illness and possible further physical disability.

The teacher who sends a seemingly unhealthy pupil to the medical office or the coach who, in his observations in practice, notes that a boy is not up to par physically and refers him to the physician is performing a service of unestimable value. Thus, it behooves the school physician to educate each of these persons for his responsibility and impress upon him the necessity for his cooperation in the establishment of a functioning system of referral.

As the physical examination is the basis of the entire health service program, so does it assume the position of vital importance in the care of athletes. In those instances where the family physician feels that a youth should not participate in athletics, his opinion is always to be respected and followed. In those instances, to the contrary, in which the examination at school reveals physical disability and the family physician feels the youth fit for sports, I feel we should remember that if that youth does participate to his detriment the responsibility for such usually falls upon the school physician.

There is a great variance of opinion as to the frequency with which physical examinations should be performed. In the Report of the Regent's Inquiry of the School Health Program,¹ the opinion is expressed that "a series of three thorough physical examinations in the life of the school child (supplied by the school) should be adequate even for athletes if supplemented by awareness on the part of physical educators, teachers, and parents

note that this was the same student who had albumen at the end of the football season, and that he played throughout the entire season of both sports. There were no other deviations.

Conclusions

I believe that the albumen, casts, red blood cells, and leukocytes in the playing members of the football and basketball teams resulted from an increased rate of metabolism that was directly related to the violent physical exertion of scrimmage and games. It would seem to have been of functional origin, inasmuch as it was lessened or absent after rest periods, was increased and greater after the harder and more strenuous games, was lessened or absent after the lighter and easier games, and disappeared, with one exception, at the end of the season. Dehydration of the body tissues from the limited intake of fluids previous to and during the games and the increased and excessive excretion of fluids from the body by marked perspiration may have added to this factor. However, the presence of casts, red blood cells, and leukocytes suggests that renal irritation or strain of some character must have been present to some degree in order to have produced these pathologic findings in the urine of these players.

These studies were made upon students of the high school between the ages of 16 and 18 and during their early post-adolescent periods. In some instances these players were members of the football and basketball teams and engaged in all games of both sports throughout each entire season. In this way they were subjected to the physical strain of these sports for a major part of the entire school year, and had albumen, casts, red blood cells, and leukocytes in all or most specimens of their urine during this entire period. If this persisted in a like manner throughout the three or four years of high school and was followed in a similar

manner for three or four years of a college course, these students would be subjected to this renal strain for the greater part of seven or eight consecutive years during a time when full physical development was being established—a period most important and essential to their future health. I wonder whether this condition might tend, lead to, or terminate in a premature or early renal degeneration or some other renal change when these students reach full maturity and are exposed to some undue or excessive physical stress or strain at that time.

I am unprepared to make a final analysis of the matter at this time and only present my observations to you because of their great interest to me. However, I am convinced that this is an important matter and one in which all school physicians should be interested. We are responsible for the health of the students of our schools and are engaged by our respective boards of education to protect those students at all times, insofar as it rests within our power and ability as school physicians. I intend to do this work in a similar manner with the football team of next year, but on a greater and more extensive scale and with an improved and better plan after my experiences of this year. In addition to selected members of the football and basketball teams, I will select a small number of nonathletic members of the high school in those same years and use them as control cases with those students who are engaged in athletic contests. This will entail a vast amount of labor, but I feel that it will be more valuable than my work of the past year. I am not prepared to explain or discuss the physiologic or pathologic processes of these findings at this time, but I present them to you solely as I met them and urge that other school physicians engage in some sort of a similar study in their respective schools at this time.

A man once wrote to a medical school willing them his brain after his death in order that they might study it to see why he was so smart. He

received a reply from the university stating "We are grateful for all small offerings."—*Med Record*

cedures may be dispensed with unless indicated.

In many schools it seems that if the physician has checked the athletes and is sure they are physically sound at the beginning of the season his duties are finished. General supervision of these boys is still his responsibility. I feel that no high-school boy should be allowed to participate in more than one sport in any one season. A check should be made to make certain that he is not participating in additional athletic activities in Y M C A's and other athletic centers. Poor physical condition with resulting poor performance can often be traced to unsupervised activities outside the jurisdiction of the school.

Practice sessions should at no time be in excess of two hours. Needless to say early sessions should be light and much time spent in the demonstration of the proper type of exercise for the strengthening of weakened joints and muscles. During these early sessions proper equipment in the form of braces, paddings, and support should be fitted to the individual needs. If a school is financially unable to supply such equipment, they should not compete in that type of athletics necessitating bodily contact. However, with the use of felt, foam and sponge rubber, straps, adhesive, and a little ingenuity, many devices can be made that will save many painful and costly injuries.

The feet should receive consideration in at least three ways. Provisions should be made at the entrance to showers for the use of some prophylaxis to prevent the spread of the dermatophytoses. The solution used is one of individual choice, but a sponge rubber mat placed in the tank of the solution prevents spilling and great waste.

In many sports the toughening of the skin of the feet should be undertaken as a means of protecting against blisters and infections. Compound tincture of benzoin may be used alone or the following formula: compound tincture of benzoin 50, acetone 40, tannic acid 10 per cent. This is rubbed well into the feet before each practice and allowed to dry. The

feet are then dusted with powder to prevent the stocking adhering to the feet.

Strapping the feet and ankles in such games as football and hockey, thus giving support and protection to this vulnerable spot, will save many injuries.

Another matter that may seem trivial but is, nevertheless, important is to make certain that each athlete has and uses his own towels, uniform, and materials assigned to him. Adequate laundry service for these materials should be mandatory, either through individual care or school service. As a result of these precautions many skin infections can be averted.

Rules of training as to regulation of hours, habits, and the like may be the responsibility of the individual coach. An outline of a well-balanced diet should, I believe, be supplied by the physician and the athlete advised to follow it. It is advisable, in the more strenuous sports at least, to keep an individual weight record, this being checked at least twice weekly during the playing season. Any unexplained weight loss is ground for referral on the part of the coach.

I would advise that upon the days of competition the meal immediately preceding should be very light, even perhaps merely $\frac{1}{2}$ to 1 ounce of cane sugar or lactose in a glass of orange juice. If competition be in the afternoon, breakfast should be heavy and perhaps comparable to the ordinary dinner. Nourishment between the halves of a contest may, if one desires, be in the form of a few tablets of one of the simple sugars, easily digested and assimilated.

As a supplement to a balanced diet and a source of increased muscular energy, gelatine (U S P) may be used. Recent physiologic research⁴ has shown that the glycine contained in gelatine increases the phosphocreatine content of the muscle, thus increasing the chemical store of potential energy. Experimentation has shown that by concentrated feedings of gelatine energy output has been increased 100 per cent. Several universities have been using gelatine on their training tables. One-half to 1 ounce of gelatine has been taken daily in addition to the

of the need of referral of children developing abnormalities between routine examinations" Perhaps some of you follow this system and feel that your personnel is keen enough in their observations to use this referral system satisfactorily with such a lapse between examinations. Rather than allow defects to reach the symptom-producing stage, I feel that by more frequent examination these may be found and corrected or proper therapy instituted before irreparable damage is done.

From this system of checking, we may swing to another group who feel that athletes should receive an examination before starting practice, again before actual competition, once during the playing season, and again at its close. For the athlete perhaps this is ideal, but to my mind it would give the coach a sense of false security in relation to their physical condition. Certainly in most of our schools this system is not practicable if at all necessary.

Between these two extremes it seems we may strike a sound working policy, which to my mind consists of at least one thorough physical examination yearly before entering athletics with a thorough understanding on the part of the teacher and coach the necessity of referral.

My own system has been one complete examination early in the year and then a check of heart, lungs, previously injured parts, and a search for hernia before each new sport. With this system, there have been occasions in which defects have been demonstrated, which caused no symptoms for which the coach should have referred that individual, nor were the defects in any case sufficiently severe to indicate that more frequent examinations would have been advisable. I have been repaid for my trouble by the few instances in which defects have been found in examining athletes thus frequently.

To state that the physical examination should be a thorough one should be adequate, however, I should like to emphasize a few points. Despite the minimum age requirements as established by the state,^{2a} one needs to remember that

he is dealing with a group of boys in a rapid stage of growth, some of whom, though physically sound, are not to be benefited by strenuous competitive sport. This youth, I feel, should be given supervised physical education until such a time when he is sufficiently mature physically for major competition. Properly conducted intramural sports would be of value to him during this period. In games involving bodily contact we should group our athletes according to size, weight, maturity, and ability to maneuver the body.

The general physical examination is of primary importance, and, therefore, I feel the initial examination should be performed by one competent physician who is able to correlate his observations rather than by a group of physicians, each checking the athlete for that portion of his anatomy that falls within his specialty.

After the thorough correlation, should any doubt exist in the mind of the examiner, the athlete should not be allowed to participate or the advice of the specialist should be secured and followed. Foci of infection, needless to say, if they are deemed adequate to impair health, should be eliminated before participation is allowed. The cardiologist is, no doubt, the man upon whom the school physician must place much responsibility in deciding whether or not competition will injure those having borderline cardiac conditions. Every school system should have such a specialist available to whom such cases might be referred.

I feel that many of us fail in our examinations because we do not thoroughly check joints and examine for existing and potential hernias, knowing that especially in those sports in which bodily contact is inevitable further injury to such a weakened part may cripple that person for the remainder of his life. If a thorough physical examination has been performed (checking, before and after exercise), if foci of infection have been considered and if the blood pressure has been noted and the system of referral followed by a competent teaching and coaching staff, I feel that further routine laboratory pro-

cedures may be dispensed with unless indicated

In many schools it seems that if the physician has checked the athletes and is sure they are physically sound at the beginning of the season his duties are finished. General supervision of these boys is still his responsibility. I feel that no high-school boy should be allowed to participate in more than one sport in any one season. A check should be made to make certain that he is not participating in additional athletic activities in Y.M.C.A.'s and other athletic centers. Poor physical condition with resulting poor performance can often be traced to unsupervised activities outside the jurisdiction of the school.

Practice sessions should at no time be in excess of two hours. Needless to say early sessions should be light and much time spent in the demonstration of the proper type of exercise for the strengthening of weakened joints and muscles. During these early sessions proper equipment in the form of braces, paddings, and support should be fitted to the individual needs. If a school is financially unable to supply such equipment, they should not compete in that type of athletics necessitating bodily contact. However, with the use of felt, foam and sponge rubber, straps, adhesive, and a little ingenuity, many devices can be made that will save many painful and costly injuries.

The feet should receive consideration in at least three ways. Provisions should be made at the entrance to showers for the use of some prophylaxis to prevent the spread of the dermatophytoses. The solution used is one of individual choice, but a sponge rubber mat placed in the tank of the solution prevents spilling and great waste.

In many sports the toughening of the skin of the feet should be undertaken as a means of protecting against blisters and infections. Compound tincture of benzoin may be used alone or the following formula: compound tincture of benzoin 50, acetone 40, tannic acid 10 per cent. This is rubbed well into the feet before each practice and allowed to dry. The

feet are then dusted with powder to prevent the stocking adhering to the feet.

Strapping the feet and ankles in such games as football and hockey, thus giving support and protection to this vulnerable spot, will save many injuries.

Another matter that may seem trivial but is, nevertheless, important is to make certain that each athlete has and uses his own towels, uniform, and materials assigned to him. Adequate laundry service for these materials should be mandatory, either through individual care or school service. As a result of these precautions many skin infections can be averted.

Rules of training as to regulation of hours, habits, and the like may be the responsibility of the individual coach. An outline of a well-balanced diet should, I believe, be supplied by the physician and the athlete advised to follow it. It is advisable, in the more strenuous sports at least, to keep an individual weight record, this being checked at least twice weekly during the playing season. Any unexplained weight loss is ground for referral on the part of the coach.

I would advise that upon the days of competition the meal immediately preceding should be very light, even perhaps merely $\frac{1}{2}$ to 1 ounce of cane sugar or lactose in a glass of orange juice. If competition be in the afternoon, breakfast should be heavy and perhaps comparable to the ordinary dinner. Nourishment between the halves of a contest may, if one desires, be in the form of a few tablets of one of the simple sugars, easily digested and assimilated.

As a supplement to a balanced diet and a source of increased muscular energy, gelatine (U.S.P.) may be used. Recent physiologic research⁴ has shown that the glycine contained in gelatine increases the phosphocreatine content of the muscle, thus increasing the chemical store of potential energy. Experimentation has shown that by concentrated feedings of gelatine energy output has been increased 100 per cent. Several universities have been using gelatine on their training tables. One-half to 1 ounce of gelatine has been taken daily in addition to the

regular diet by pouring one or two ($1\frac{1}{4}$ ounce) envelopes into a glass of water or fruit juice, allowing the gelatine to be absorbed in the liquid, stirring briskly, and drinking quickly before it thickens

Voluntary expressions by athletes in these institutions indicate that as a result of its use they tire less easily and feel better after strenuous exercise. This procedure in high schools would be an individual matter upon advice of coach or physician

Gum chewing seems to be a means used as an outlet for nervous tension, while to my mind its physiologic action during muscular activity is contraindicated. As soon as one starts to masticate, saliva flows, secretion of gastric juices and peristalsis is stimulated. This action necessitates a flow of blood to the viscera, thus cutting down the available supply for muscular activity. It is very possible that the release of nervous tension resulting from gum chewing, if such be the case, compensates for the loss of blood to the visceral area

The mental hygiene of the high-school youth in athletics must also be considered both by coach and physician. Many potentially good athletes are spoiled by improper psychology on the part of those instructing or caring for them. One must consider the individual characteristics at this age and appreciate that more personal attention is necessary. Too often have I seen a boy injured in a game and replaced by another without the coach apparently taking the slightest interest in his condition

Inasmuch as the Department of Education^{2b} rules, and rightly so, that only first aid shall be given by the school physician in care of injuries, my remarks shall be brief. At least at each contest in which bodily contact is necessitated a physician should be in attendance. Despite insurance for athletes, there are many bruises and contusions that do not receive proper care, inasmuch as the cost of constant follow-up by the private physician would be prohibitive. I feel that an inductotherm or a short-wave diathermy in the field house for the treatment of charleyhorse, sore arms, and the like, would be legitimate and of great aid. Too many boys have returned to competition with bruised muscles only to develop later a myositis ossificans. No physician can be too careful in making certain that the injured athlete is fit before allowing him to return to play, despite the eagerness on the part of the athlete and the coach

In conclusion I should like again to stress that in addition to the personal work performed by the physician the failure or success in the care of athletes in his school system depends greatly upon the effectiveness of the referral system established—through parent, teacher, coach, and nurse

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DRUGGISTS AND DOCTORS

Appointment of Edward Spease, Dean of the College of Pharmacy of Western Reserve University, Cleveland, as head of a new department of Interprofessional Relations of the National Association of Retail Druggists, was announced. The Dean started his new work about September 1.

While the actual development of the new department will be left to Dean Spease, it was learned at the N A R D headquarters that it will center around the creation of better relations between the retail druggists and the medical fraternity

"Doctors," said a spokesman, "don't like the druggist who prescribes. On the other hand, druggists don't like the doctor who dispenses"

INTEGRITY WILL WIN

The physician recognizes his shortcomings and those of his colleagues, and he is not averse to their being pointed out, but distortion and untruth irk him. Especially distasteful have been the "news articles" emanating from government departments employing high powered publicity experts

Despite the criticism leveled at the profession in the press and elsewhere the physician is confident that it has not taken deep root in the public mind and that, notwithstanding publicity experts aided by the Hugh Cabots, the people will continue to have faith in the integrity of the medical profession—*Medical Annals of the District of Columbia*

VERTEBRAL HEMANGIOMA WITH NEUROLOGIC SYMPTOMS

LE MOYNE COPELAND KELLY, M D, New York City

MUTHMAN¹¹ in 1903 reported the first case of vertebral hemangioma with compression symptoms in the spinal cord, but it was not until Hitzrot²¹ published the first radiograph of a hemangioma of bone that much attention was given to this interesting entity. Alpers and Pancoast¹ assert that "hemangioma of the vertebra is a very uncommon condition." Yet, Hammes¹⁷ in 1933 stated that in a series of 10,000 consecutive postmortem examinations made at the Schmorl Institute, routine section of the vertebrae showed an incidence of 10 per cent, and Makrycostas²³ described 12 cases without neurologic signs from Erdheim's Laboratory. Perhaps a truer analysis of the frequency and importance of this condition is the statement by Ireland¹² that "hemangioma of the vertebra from a clinical aspect is a rare disease." Certainly this would seem to be true, for Scheer²⁷ could find only 35 cases in all the world's literature and then added 2 of his own. Of this number, 22 were men and 13 were women. There appears to be no special age incidence. Eight were under 20 years of age, 11 were between 21 and 40, 11 were between 41 and 60, and 5 were over 60 years of age. In 2 cases the age and sex were not given.

In 15 of the cases the patient had symptoms of compression, and the condition was found on x-ray and confirmed at operation. Ten cases were found at autopsy—without antemortem indication of their presence—and 12 (32 per cent) were diagnosed by the characteristic x-ray appearance alone. These were relieved by therapy with x-ray or radium. The areas most frequently affected are the

bodies of the lower dorsal and upper lumbar vertebrae. Only 1 case involving a cervical vertebra has so far been reported.

The severity of the symptoms is, in general, dependent upon whether the process is confined to the body of the vertebra or extends into the spinal canal. Pain in the back was the only symptom observed in 7 cases, and this was, as a rule, in older patients. At times, this pain radiated to the abdomen and lower extremities and often tended to confuse the diagnosis. In Ireland's case,²² the patient had had the typical symptoms of peptic ulcer for several years, although all tests for gastrointestinal function were normal. After radium therapy, her abdominal symptoms disappeared as if by magic. His was the second case of this nature ever diagnosed clinically before operation or autopsy, Natrass and Ramage²² having been the first to report their observations in the literature.

It has never been quite clear why the symptomatology has so often been at variance with the anatomic picture. Junghanns,²⁴ for example, pointed out that in spite of the fact that often the entire body of the vertebra was found to be involved, in some cases even with extension of the tumor to the laminae and transverse processes, very few of his cases showed symptoms of compression of the spinal cord. Moreover, pathology may be present in a vertebral segment without any changes whatsoever in the x-ray picture, as illustrated by 3 reported cases (Connell and Hay,⁸ Hille,²⁰ and Hammes¹⁷). Two were found at operation and 1 at autopsy. Alpers and

TABLE 1—REGION TREATED

	Target Skin Distance	Size Field, Cm.	Current	Time, Minutes
Lumbar Spine				
Post.	805	200	0.75	60
Ant.	906	200	1.00	60

TABLE 2—VERTEBRAL HEMANGIOMA ALL CASES REPORTED IN WORLD'S LITERATURE

1 Patients with Compression Symptoms			A Operated Cases (15)	
Author	Sex, Age	Symptoms	X-Ray Findings	Treatment
Alpers & Pancoast, 1932	F 46	Neurologic 4 yr., weakness in legs followed by difficulty in walking and spastic paralysis. Retention of urine.	Coarse-meshed structure in corpus and laminae of dorsal 8. Myelograph showed obstruction at this level.	Laminectomy dorsals 7-10 Postoperative x ray therapy
Bailey & Bucy 1929	F 62	Neurologic, 10 mo. periodic difficulty in walking spastic paraplegia and abdominal pain.	Coarse-meshed structure of vertebral trabeculae in bodies of dorsals 3, 5 & 6.	Laminectomy dorsals 5 & 7
Clavelin & Gauthier 1927 1928	M 21	Neurologic 2 mo., heaviness in legs, spastic paralysis in creased albumin & cell count in spinal fluid.	Coarse meshed structure in fourth thoracic vertebra. Myelograph showed obstruction at this level.	Laminectomy of dorsals 3 & 6
Clausnizer 1937	F 31	Neurologic 3 yr. pain around waist & in lumbar area, difficulty in walking increasing spastic paralysis.	No definite change in structure of vertebra but myelograph showed obstruction at level dorsals 4 or 5.	Laminectomy dorsals 2-8
Climescu & Janas 1933	M, 15	Suggested transverse myelitis	Destruction of dorsal 5 in all directions. Coarse meshed structure in body.	Laminectomy
Fumarola & Enderle 1934	M, 23	Neurologic 0 yr. Pain in back radiating around abdomen. Increasing weakness of legs and spastic paralysis. Bladder paralysis.	Body dorsal 5 barrel shaped. Coarse meshed structure of vertebral lamella. Yearly x rays from 1930-1933 show progressive changes.	Laminectomy of dorsals 4 & 5
Gold E 1926	M 23	Radiating pain and weakness both legs—5 mo. Later in creasing spastic paralysis. Bladder paralysis.	Bodies of dorsals 1, 6 & 7 showed coarse-meshed structure with broad lamella running vertically.	Laminectomy
Guillain Decourt & Bertrand 1928	M 18	Paraplegia of lower extremities 1 yr. Then spastic paralysis.	Dorsals 7, 8 & 9 vertebrae showed coarse-meshed structure.	Laminectomy
Hammes E 1933	F 17	Compression of cord	No definite x ray findings.	Two laminectomies of dorsals 6 & 7 in 6-mo period.
Hille K 1924	M 57	Paresthesia in legs 7 yr. In creasing spastic paralysis for 1 yr. Bladder & rectal paralysis. Trophic ulcers on feet. No pain.	No change found.	Laminectomy dorsals 2-6. Excision of epidural tumor.
Jano J 1931	M 17	Compression of cord	Coarse meshed structure of dorsal 2.	Laminectomy of dorsal 2. Excision of hemangioma.
Jungheans 1932	M 62	Pain in upper back radiating to left chest 5 mo. weakness in lower extremities increasing difficulty walking. Spastic paralysis absent abdominal reflexes.	Herringsbone appearance and forward displacement body dorsal 3. No bony structure seen in upper part of thoracic column but myelograph showed obstruction dorsals 2-3.	Laminectomy of dorsals 1 & 2. Removal of epidural hemangiomatous structure.
Perman E 1927	F 24	Increasing 2 yr. weakness both legs. Later spastic paraplegia.	Increased diameter both in length and width. Coarse-meshed structure in body dorsal 8 and right transverse process.	Laminectomy dorsal 8
				Compression of medulla. Verified histologically as hemangioma.
				Complete cure.

November 1, 1940]

VERTEBRAL HEMANGIOMA

1609

Roth Rith & Scherer,
1931
Pain in legs 4 yr incontinence
of urine spastic paralysis
perineum
Compression of medulla

Author	Sex	Age	Symptoms	Findings	Treatment	Results
Concelf & Hay	F	1030	Paralysis from hips down	Compression of medulla	Laminectomy dorsals 11 & 12 and lumbar 1. Im mobilization X ray then laminectomy	Cured but urinary symptoms were unchanged Same symptoms re- turned 8 wk after discharge
Deets	F	1901	Paralysis from hips down	Compression of medulla	Laminectomy dorsals 11 & 12 and lumbar 1. Im mobilization X ray then laminectomy	Cured but urinary symptoms were unchanged Same symptoms re- turned 8 wk after discharge
Gerhardt	M	1865	Paralysis from hips down	Compression of medulla	Laminectomy dorsals 11 & 12 and lumbar 1. Im mobilization X ray then laminectomy	Cured but urinary symptoms were unchanged Same symptoms re- turned 8 wk after discharge
Koch Grunberg	F	1930	Paralysis from hips down	Compression of medulla	Laminectomy dorsals 11 & 12 and lumbar 1. Im mobilization X ray then laminectomy	Cured but urinary symptoms were unchanged Same symptoms re- turned 8 wk after discharge
Mutbman	F	1003	Paralysis from hips down	Compression of medulla	Laminectomy dorsals 11 & 12 and lumbar 1. Im mobilization X ray then laminectomy	Cured but urinary symptoms were unchanged Same symptoms re- turned 8 wk after discharge
Novak	F	1030	Paralysis from hips down	Compression of medulla	Laminectomy dorsals 11 & 12 and lumbar 1. Im mobilization X ray then laminectomy	Cured but urinary symptoms were unchanged Same symptoms re- turned 8 wk after discharge
Ribbert	F	1012	Paralysis from hips down	Compression of medulla	Laminectomy dorsals 11 & 12 and lumbar 1. Im mobilization X ray then laminectomy	Cured but urinary symptoms were unchanged Same symptoms re- turned 8 wk after discharge
Trommer	F	1020	Paralysis from hips down	Compression of medulla	Laminectomy dorsals 11 & 12 and lumbar 1. Im mobilization X ray then laminectomy	Cured but urinary symptoms were unchanged Same symptoms re- turned 8 wk after discharge
Zdamsky & Risak	F	1030	Paralysis from hips down	Compression of medulla	Laminectomy dorsals 11 & 12 and lumbar 1. Im mobilization X ray then laminectomy	Cured but urinary symptoms were unchanged Same symptoms re- turned 8 wk after discharge
Bernard & Van Nuy	F	1033	Paralysis from hips down	Compression of medulla	Laminectomy dorsals 11 & 12 and lumbar 1. Im mobilization X ray then laminectomy	Cured but urinary symptoms were unchanged Same symptoms re- turned 8 wk after discharge
Heaney & Whitaker	M	1033	Paralysis from hips down	Compression of medulla	Laminectomy dorsals 11 & 12 and lumbar 1. Im mobilization X ray then laminectomy	Cured but urinary symptoms were unchanged Same symptoms re- turned 8 wk after discharge
Ireland	F	1033	Paralysis from hips down	Compression of medulla	Laminectomy dorsals 11 & 12 and lumbar 1. Im mobilization X ray then laminectomy	Cured but urinary symptoms were unchanged Same symptoms re- turned 8 wk after discharge

Completely relieved, but no change in appearance of bone after 12 mo of therapy
Complete cure

TABLE 2.—VERTEBRAL HEMANGIOMA. ALL CASES REPORTED IN WORLD LITERATURE (Continued)

Author	Sex	Age	Symptoms	3 Patients Without Compression Symptoms (12) (Continued)		Treatment	Results
				Symptoms	X-Ray Findings		
Lievre 1934	M	36	Pain in lumbar region 7 yr sciatic syndrome	Right	Coarse-meshed structure lumbar 1 X-ray changes seem to have in- creased during 7 yr period	X-ray therapy	Pain reduced considerably
Livingston 1935	M	44	Low back pain onset 38 yr after injury	Right	Third lumbar vertebra shows coarse-meshed structure	X-ray therapy	Good results
Michon, 1935	F	34	Compression symptoms without ra- dialgia pain	Right	Fourth thoracic shows spongy struc- ture	X-ray therapy	Very good results
Mossesman 1933	F	58	Bilateral sciatica 1 yr	Increased reflexes	Coarse meshed structure lumbar 3 with vertical trabeculae	X-ray therapy	Complete cure
Nattnass & Ramage 1932	M	51	Increasing fatigue paresthesias both legs 3 mo. Slightly spastic gait.	Increased Bilateral Babinski	Coarse meshed structure dorsal 8 Myelograph shows obstruction at this level	X-ray begun 10 mo after onset of symptoms	Complete cure for 1 yr
Zawadowsky & Zar- zynski 1937	F	60 (2)	Both from 5 mo to 3 yr. Showed progressive paresthesia then com- plete paralysis both legs	Both from 5 mo to 3 yr. Showed progressive paresthesia then com- plete paralysis both legs	Coarse meshed structure of bodies para-vertebra hematoma between dorsals 3 & 9	X-ray therapy for both	Complete cure in both cases
Scheer 1933	F	73	Lumbago & sciatic syndrome 7 yr Pain radiated to buttocks and along back of thigh	7 yr Pain radiated to buttocks and along back of thigh	Bodies of dorsals 6 7 11 12 & lumbar 1 showed coarse meshed structure X-ray 5 yr later showed no change	Radium therapy	Considerable reaction and at the second treatment 2 mo later patient was entirely free from pain
Scheer 1930	F	56	Pain in lumbar area since child- hood. Past few yr have moved upward. Worse after heavy work. In bed 1 mo 1930 with bilateral sciatica	Pain in lumbar area since child- hood. Past few yr have moved upward. Worse after heavy work. In bed 1 mo 1930 with bilateral sciatica	Lumbar 1 is wider and longer than normal. Coarse meshed struc- ture in the whole corpus with clearings as big as a pea	X-ray therapy—3 series over thoracic & lumbar regions at 2 wk inter- vals—(each series 2 by 185 r with 1/3 mm Cu 40 cm distance 4 ma and 170 kv)	Almost complete relief of sym- ptoms

Pancoast¹ suggest the possibility that there may be a certain amount of ex-
pansion, resulting from the filling of
blood spaces, in a tumor confined to the
vertebral body, and that this ebb and
flow might conceivably cause an aggrava-
tion of the symptoms from time to time.
This is in accordance with the observa-
tions of Bailey and Bucy,² who found
that the pathologic process consists of
numerous groups of cavernous vascular
channels with absorption and deposition
of bone cells. Hanson¹⁸ has demon-
strated that two adjacent vertebrae may
receive branches from a common artery,
which may account for the observation
that two or more vertebrae may at times
be similarly affected.

There has been much discussion in the
literature as to the advisability of making
a diagnosis in this condition solely by the
roentgenograph. However, Gold¹⁵ and
Perman³² both find that the coarse
meshed, vertical striations with areas of
rarefaction between are definite and
sufficient evidence on which to base a
diagnosis. Livingston²⁷ agrees with this
and gives a fine illustration of these char-
acteristic findings in his monograph.
Bucy and Capp⁴ state that the x-ray ap-
pearance of hemangiomas of vertebrae
is sufficiently characteristic to prevent
mistakes in diagnosis. Alpers and Pan-
coast¹ found a case in which it was
possible to make a preoperative diagnosis
by x-ray and stated that the x-ray ap-
pearance was similar, in a way, to that
found associated with cavernous heman-
giomas of the skull as described by Cush-
ing⁹ and Sosman,³³ i.e., a typical honey-
combing or network appearance. Bailey
and Bucy² reported in 1929 that cavern-
ous hemangioma of the vertebra presents
a characteristic x-ray picture which can
be readily diagnosed. Bernard and Van
Nuys³ concluded their paper with the
statement "The diagnosis of this condi-
tion should be made from the x-ray pic-
ture which is typical."

The treatment depends entirely upon
the severity of the symptoms. Scheer¹
states that a vertebral hemangioma with
neurologic findings calls for surgery in



FIG 1 Anteroposterior view of dorsolumbar spine showing characteristic vertical striations



FIG 2 Lateral view showing typical coarse-meshed structure of the vertebrae

spite of the danger of hemorrhage, and Lievre²⁷ confirms this opinion by the statement that roentgen therapy should be reserved for those cases where pain is the only symptom. Livingston²⁷ obtained excellent results in his case with the dosage shown in Table 1, see page 1607.

Of the 14 cases operated upon, 4 died, 9 were cured or very much improved, and in 1 the symptoms remained unchanged. Of the 9 cases treated with x-ray, 8 were improved and 1 had no benefit, whereas all of the 3 cases given radium therapy showed marked improvement, including 1 patient aged 73.

My patient was a man 31 years old who complained of pain between the shoulder blades for a period of two years and the sensation "as if the vertebrae had slipped out of place." He had been in the habit of visiting an osteopath who relieved his attacks of headache and indigestion, but who was not able to favorably influence his back pain. A roent-

genograph showed the characteristic coarse-meshed structure in the bodies of dorsals 5 and 12 and lumbar 1. He received thirty consecutive daily treatments to both anterior and posterior fields for a total of 3,000 volt units (135 kv, 5 ma—40 cm distance—6 mm Al). At the end of three weeks the patient's symptoms had almost entirely disappeared, and five months after the inception of therapy a check-up showed about 50 per cent improvement in the x-ray picture. One year later he was found to have completely recovered.

Summary

- 1 Primary hemangioma of the vertebra is a comparatively common condition but rarely gives rise to symptoms.
- 2 Symptoms, when present, may be divided into two groups (a) compression of the spinal cord, and (b) pain in the back, with or without radiation.
- 3 Diagnosis can safely be made by

the characteristic coarse-meshed appearance of the body of the vertebra produced by vertical striations alternating with large areas of rarefaction in the bone

4 Surgery should be attempted at once in all cases with advanced neurologic symptoms who are good operative risks, whereas radiation therapy should be tried in those patients in whom pain is the only symptom or who are not in a position to undergo a major surgical procedure

133 East 58th Street

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THE PROFESSION'S 'LAST OPPORTUNITY'

The critical international situation gives the profession a last opportunity to formulate and put in effect its own medical service plans believes the *New York Medical Week*. The need for vastly increased armaments has put the brakes, temporarily at least, on projects for state medicine. If the profession utilizes this interval to supply deficiencies in the existing distribution of medical care, it will be in a much stronger position to go before the people when the issue of medical socialization again becomes acute.

The present breathing space should not be considered as terminating the danger of state medicine or even postponing it indefinitely. In spite of multiplying examples of what happens to nations that are willing to sacrifice independence for ease, there are still persons who believe that governmental control is an acceptable alternative to individual effort. Considering its vote-getting possibilities, it is not surprising that certain politicians are willing to encourage the delusion that the state is an inexhaustible grab bag from which all sorts of free prizes can be withdrawn.

Actually, as mounting taxes testify, there is no greater fallacy. Every penny the government

spends must ultimately be supplied by taxes—and everybody pays these taxes. In fact, they fall most heavily on the poor and lower middle class.

If the profession demonstrates its ability to supply medical needs efficiently and inexpensively, the government will have no excuse for asking the nation to support the vast political bureaucracy which is the inescapable concomitant of state medicine. Neither good intentions nor nebulous plans for the future will be accepted, however, as proof that the profession can do the job itself, without political domination.

The growth of group hospitalization insurance proves that the public is receptive to the idea of providing for its own needs by voluntary insurance when the latter is offered at reasonable rates. There is no reason why nonprofit medical expense indemnity insurance should not meet with equal success if suitable uniform standards are worked out and participating organizations are efficiently administered. At any rate, there is an unparalleled opportunity—and necessity—for the profession to carry out its plans now.

"Kentucky mountaineer becomes father of twenty-second child," reads a headline. He must have gone stork mad.—*Med Record*

"What is a reconvalescent, father?"
"A reconvalescent is a patient who is still alive"—*Med Record*

Medical Preparedness

County Health Preparedness Committees Ordered as Defense Measure

Governor Lehman and Lieutenant-Governor Charles Poletti, as State Coordinator for National Defense, have ordered the *State Commission to Formulate a Long Range Health Preparedness Committee* in each of the various counties of the state. This committee, reports *Health News*, will act as the official advisory body for the coordination and integration of the health preparedness activities of the doctors, nurses, hospitals, and others responsible for health services in each county. The work will be of signal importance in the event of an emergency requiring united action for national defense.

The Commission, of which Assemblyman Lee B. Mailler is chairman, has instructed that there shall be appointed, by the chairman of the board of supervisors or the county executive in those counties where there is a county executive, an official advisory health preparedness committee including the following:

- 1 The official appointing the committee or his representative.
- 2 The district state health officer having supervision of the area.
- 3 The county health officer if there be one. The city health officer of the cities within the county if there be any.
- 4 The chairman of the Medical Preparedness Committee of the County Medical Society for the county.
- 5 The county commissioner of public welfare. The public welfare officers of the cities within the county.

- 6 A representative of the hospitals within the county (hospitals to include public, voluntary, and proprietary).
- 7 A representative of the New York State Dental Society.
- 8 A representative of the American Red Cross.
- 9 A representative of the New York State Nurses Association.
- 10 A representative of the New York State Pharmaceutical Society.
- 11 Such representatives of the city or cities within the county as are deemed necessary to help fulfill properly the health preparedness functions of the advisory committee. (In certain counties of the state there exist cities having organized health groups in addition to the local public health and welfare departments. Cities should be given adequate representation on the advisory health preparedness committee of the county. To select such city representatives the county appointing official should cooperate with the mayors of the cities in his county. It is advised that those selected by the appointing official should be individuals familiar with the health services in their community.)

The Commission has recommended that in each county the person on the County Defense Council who is familiar with health problems be selected chairman preferably the chairman of the Medical Preparedness Committee of the County Medical Society. In this way the health phase of defense may be coordinated and integrated with the general preparedness program carried on by the defense councils and state defense coordinator.

Latest Decision as to Interns, Residents, and Doctors in the Draft Age
DOCTOR Samuel J. Kopetzky as chairman of the Committee on Medical Preparedness of the Medical Society of the State of New York asked the Selective Service Administration for definite decisions as to these physicians. The reply is below

NATIONAL HEADQUARTERS
 SELECTIVE SERVICE SYSTEM
 21st Street and C Street N W
 Washington D C.

October 15 1940

Dear Dr. Kopetzky,

Your letter of September 25th with reference to the status of young doctors under the Selective Service Act of 1940 has been referred to this office by the New York State Headquarters for Selective Service.

As you doubtless know Section 5(a) of the Act provides in part that any member of the public health service Federally recognized National Guard the Officers Reserve Corps, the Naval Reserve the regular Army Reserve, the Marine Corps Reserve, and cadets of the advanced course, senior division Reserve Officers Training Corps or Naval Reserve Officers Training Corps (among other service organizations) are not subject to registration or training under the Act. Therefore any doctor or dentist who is already

in one of these organizations is not subject to training under the Act and no problem concerning them will arise unless they are called to active duty. With regard to doctors who are now members of such organizations, your attention is invited to the enclosed statement of policy promulgated by The Adjutant General of the U S Army. If these officers are below the rank of Captain and have dependents they may resign or be discharged. Further, they may be placed in the War Department pool, or otherwise in a deferred status, if, upon application, the War Department finds that the function they are now performing is of greater immediate relative value to the national defense program than the duty they would be called upon to perform if they were called to active duty.

Section 5(f) of the Act provides

"(f) Any person who, during the year 1940, entered upon attendance for the academic year 1940-1941—

(1) at any college or university which grants a degree in arts or science, to pursue a course of instruction satisfactory completion of which is prescribed by such college or university as a prerequisite to either of such degrees, or

(2) at any university described in paragraph (1), to pursue a course of instruction to the pursuit of which a degree in arts or science is prescribed by such university as a prerequisite,

and, who, while pursuing such course of instruction at such college or university, is selected for training and service under this Act prior to the end of such academic year, or prior to July 1, 1941, whichever occurs first, shall, upon his request, be deferred from induction into the land or naval forces for such training and service until the end of such academic year, but in no event later than July 1, 1941."

Therefore, any student who is matriculated for a medical degree, or who is taking a pre-medical course, may, upon application, be deferred from training until the completion of this academic year. Furthermore, Section 5(e) provides

"(e) The President is authorized, under such rules and regulations as he may prescribe, to provide for the deferment from training and service under this Act in the land and naval forces of the United States of those men whose employment in industry, agriculture, or other occupations or employment, or whose activity in other endeavors, is found in accordance with section 10(a) (2) to be necessary to the maintenance of the national health, safety, or interest."

It further provides

"(e) No deferment from such training and service shall be made in the case of any individual except upon the basis of the status of such individual, and no such deferment shall be made of individuals by occupational groups or of groups of individuals in any plant or institution."

As you will note from the above-quoted provisions, the Selective Service System has no authority to instruct local boards to defer physicians as a class, and, of course, no power to exempt them. The rules and regulations promulgated by the President provide, in substance, that if the local board finds any registrant to be a "necessary" man in any activity, *or in training or preparation therefor*, the maintenance of which is necessary to the national health, safety or interest, in the sense that it is useful or productive and contributes to the employment or well-being of the community or the nation, then the local board may place such registrant in a deferred class for such time as it may determine to be a reasonable period for the registrant to be replaced in that activity so that there is no disruption of that useful function.

It is, therefore, felt that local boards, with properly exercised discretion in individual cases, may prevent any hardship either to the individual or to the community in the case of the induction of any young interne, resident physician, or physician preparing himself as a specialist, or other young doctors or dentists in the categories to which you refer in your letter.

The Adjutant General's office has informed me that there is at the present, and that there will undoubtedly continue to be, a shortage of medical reserve officers. I have been further assured that if a young doctor volunteers for induction under the Act, or otherwise is inducted for training, that such doctor will be given a commission as a reserve medical officer, provided that he is a graduate of a medical school approved by the American Medical Association and can otherwise pass the necessary qualifications for a commission as a reserve officer in the Medical Corps. Since this shortage does exist, any qualified doctor who applies for a commission at this time may be granted such commission and, if so, will not be subject to training under the Act. The maximum age limit for the original appointment of a medical reserve officer is now 35, whereas the maximum age for training under the Act is 36. However, the Adjutant General's Office has recommended that this situation be rectified by raising the former to 36.

The purpose of the Selective Service System is inherent in its title. It is designed not only to select those who can best serve the country by receiving military training, but also to select those who can best serve their country by continuing the function they are now performing. Naturally, there is a vital need for medical services in the armed forces and an equally vital need for such services to the civilian population, and this is true in peacetime as well as in war. Therefore, I feel that you can rest assured that the System will so operate as to balance these needs with equity, not only with regard to the broad national picture but also in the individual case.

I want to take this opportunity to thank you personally for bringing this very important matter to my attention. I will see that the information contained in this letter is promulgated to all State Selective Headquarters.

If you have any further inquiries on this or any other matter relative to Selective Service, I suggest that you communicate directly with the State Advisor on Occupational Deferments, Major Harry J. Lemp, Engr -Res., State Headquarters for Selective Service, Albany, New York.

Sincerely,

(signed) LEWIS B. HERSHEY
Lt Colonel, Field Artillery
Executive

Copy to

Lt. Colonel W. H. Boughton, A.G.D., N.Y.N.G.

State of New York Headquarters for Selective

Service, Albany, New York.

Enclosure—1

[ENCLOSURE]

OFFICE OF THE ASSISTANT SECRETARY OF WAR,
WASHINGTON, D. C.

Transfer of Members of Officers' Reserve Corps
Who Are Key Employees in Industry
(October 7, 1940)

The primary value of the reserve military organization—and the justification of the effort and expense involved in training and military education lies in its immediate availability in an emergency.

Only one valid reason will excuse a member of a reserve military organization from the obligation stated—his greater service to the nation in his civilian status.

The conception of modern warfare recognizes the vital role of the civilian effort. The re-

quirement for availability of civilian employees, essential to industry in the national defense program, is comparable to that for armed forces. A civilian employee, however, who holds an important position in an industry related to national defense, and who is at the same time enrolled in a military organization occupies a dual position incompatible with availability in an emergency. The inconsistency of this dual status can only be corrected by timely decision as to which status better serves the national interest.

Reserve Officers, who are key men in industries related to national defense and whose retention is absolutely necessary, may be transferred to the War Department Reserve Pool upon the request of the head of the concern. It must be clearly shown that the officer cannot be replaced and that his absence on active duty would seriously jeopardize production. The War Department reserves the right in all such cases to approve or disapprove the request or to return the officer to eligible status at any time that he is considered necessary in the military service. While in this Pool, the officer is not eligible for promotion, assignment, or active duty.

A separate request for transfer to the War Department Reserve Pool must be submitted for each officer. It must be signed by the head of the firm and submitted to The Assistant Secretary of War, Washington, D C in duplicate. The following information must be supplied in each case:

- a *Name of reserve officer* (e g, John H Smith, not J H Smith)
- b *Rank and Military Organization*
- c *Home address*
- d *Date of birth*
- e *Marital status and number of dependents*
- f *Present position*

- g *Length of time in present position*
Total time with firm

- h *Statement in justification of classification of reserve officer as key employees* (Include information as to availability of replacement, or time required to train replacement if not available)

- i *In what respect the operations of the firm are related to national defense*

Each change in the occupational status of a reserve officer classified as a key employee and transferred to the War Department Reserve Pool will be reported by his firm at the time and the report will include sufficient information upon which to permit reclassification of the officer or a continuation of his key employee status.

Reconsideration of adverse action in an individual case may be requested at any time. The request should follow the form herein before outlined, and should contain such additional information as the firm desires to submit.

It should be noted that the above procedure refers *exclusively* to key employees who are commissioned in the Officers' Reserve Corps of the United States Army, and *not* to National Guard Officers, members of the Enlisted Reserve Corps, or key employees who are not members of the military establishment.

Deaths of New York State Physicians

Name	Age	Medical School	Date of Death	Residence
La Salle Archambault	61	Albany	September 28	Albany
Reginald G Bray	82	Vermont	October 5	Niagara Falls
John J M Carey	58	L I C Hosp	October 1	Brooklyn
Edward E Cornwall	74	P & S N Y	October 6	Brooklyn
Louis Freedman	65	Cornell	August 28	Brooklyn
Israel Goldstein	43	P & S N Y	August 3	Brooklyn
Rudolph J Horvath	54	Budapest	September 28	Manhattan
Lester B Klippel	46	Syracuse	September 28	Rochester
Richard A Lawrence	59	Albany	September 28	Albany
John A McElwain	56	Albany	October 6	Schenectady
Cesare Mondini	78	Palermo	September 22	Brooklyn
Herbert L Odell	81	Albany	September 27	Sharon Springs
Francis L Oswald	75	N Y Univ	September 27	Manhattan
George F Rogan	70	Albany	October 2	Medina
Marian F Sloane	36	Univ & Bell	September 23	Manhattan & Larchmont
Alan G Terrell	74	P & S N Y	October 9	Riverhead
Frank van der Bogert	67	Pennsylvania	September 24	Schenectady
Frederick W Zimmer	82	Pennsylvania	In September	Rochester

Medical News

Memorial

ON OCTOBER 10, 1940 the Council of the Medical Society of the State of New York spread on its minutes the following memorial member of the Council of the Medical Society of the State of New York, died August 28, 1940,

His life exemplified the beauty and value of the simple homely virtues. The eminence he attained was out of all proportion to the radius of his professional activities. Honesty, fairness, kindness, devotion to duty, sound judgment were so marked in him that the knowledge of his worth went far beyond the small community in which his life was spent, so that he was called to important responsibilities with the State Society of his profession.

Dr Carpenter served as vice-president and as councilor of the Medical Society of the State of New York, being the chairman of its committee on publicity for the past three years. He was a past-president of the Tioga County Medical Society and for thirty-three years had served as Waverly village health officer. He was a delegate to the American Medical Association, the American Association of Anaesthetists of the Eastern Anaesthetists and the American Public Health Association.

Though no greater tribute to his character could be offered than that given by his fellow practitioners, yet the esteem of his neighbors in the intimate community which found his daily life as open as a book must serve as a living memorial to the widow and brother who go the rest of the way without him.

"Beloved Physician," said the *Waverly Sun* in commenting on his death. "A genial gentleman who not only numbered his friends by the legion,

but who has been outstanding in humanitarian and community welfare work in this valley for two score years. He had practiced medicine in Waverly since his graduation from Cornell Medical College in 1899. During these forty-one years he has brought hundreds of the present residents of this valley into the world, has brought back countless others from the brink of the grave and has eased the passing of many more whose time on earth was done.

"It was, perhaps symbolical that Dr Carpenter should be stricken and end his days at the Tioga General Hospital—because no one was more closely identified with the conception, the building, and the progress of the hospital, than he was. For twenty years he had been president of the Old Peoples Hospital in Sayre, the forerunner of the present fine institution in Waverly. Then when the Tioga General was completed ten years ago he was elected its first president and for the last eight years he has served as chairman of its executive committee."

Dr Carpenter was an active member of the Waverly Methodist Church. A member of the board of trustees for twenty-five years, at the time of his death he was chairman. He was a member of the Waverly Masonic Lodge and of the Odd Fellows.

Four Methodist clergymen officiated at the funeral, which was attended by 700 persons. During the services the Waverly Free Library was closed out of respect, he was an original director. The offices of the town of Barton, and a number of private stores and offices also were closed.

TERRY M TOWNSEND, M D
HERBERT H BAUCKUS, M D
PETER IRVING, M D

American Academy of Ophthalmology and Otolaryngology Honors Dr Lloyd

THE American Academy of Ophthalmology and Otolaryngology, at its last meeting in Cleveland, on October 9, 1940, named as its president-elect Dr Ralph I Lloyd, of Brooklyn, New York. A graduate of the New York Medical College in 1896, Dr Lloyd served an internship in the Cumberland Hospital in Brooklyn and spent one year in the Homeopathic Hospital in Pittsburgh. His training in ophthalmology took place at the New York Ophthalmic Hospital College associated now with the Flower and Fifth Avenue hospitals. He began his practice in Brooklyn in 1899 limiting it to ophthalmology for the past twenty-five years.

Dr Lloyd is a member of the Kings County Medical Society, the Medical Society of the State of New York and a Fellow of the American Medical Association. He is a member of the New York Ophthalmological Society, a Fellow of the New York Academy of Medicine and a Fellow of the American College of Surgeons. He was a founder and a former president of the Brooklyn Ophthalmological Society.

He is consulting ophthalmologist at the Long Island College Hospital, Cumberland Hospital

Prospect Heights Hospital, and the Brooklyn Nurse and Infants' Hospital. He is also ophthalmologist at the Carson C Peck Memorial Hospital and the Brooklyn Cancer Institute.

Dr Lloyd has taken great interest in teaching his specialty, and has given lectures on perimetry at the New York University Medical School in the Postgraduate Eye Course. In 1900 to 1916, Dr Lloyd was lecturer assistant professor, and professor in the Department of Anatomy of the New York Medical College. Dr Lloyd has been much interested in recent years in the problem of adjusting as far as possible the relations of oculists with opticians and the public.

The more important ophthalmic literature credited to Dr Lloyd are to be found in the *American Journal of Ophthalmology* and the *Archives of Ophthalmology*. Among them can be mentioned "Herpes and Allied Conditions," "Tuberculosis of the Eye," "Heterochromia and Allied Conditions," "Hereditary Macular Degenerations," "Corneal Dystrophies" and "A book on perimetry put out in 1926, entitled *Visual Field Studies*

County News

Albany County

Dr Richard Andrew Lawrence, of Albany, who died on September 28 at the age of 57, was a past-president of the Albany County Medical Society and a former member of the executive committees of both the state and county societies

Broome County

The medical society met in the auditorium of the City Hospital on October 8 Dr Vincent Mazzola, of New York City, member of the Grievance Committee of the State Society, spoke on the Medical Practice Act Bill Dr Emerson C Kelly associate professor of Surgery and lecturer in Medical History at the Albany Medical College, spoke on "Greek Health Resorts in 500 B C"

The Broome County Medical Library has been started under the auspices of the county society and the Binghamton City Hospital, as authorized by the society It is located in the Board Room at the City Hospital

The publicity committee, Dr G M Dyer, chairman, reports that throughout the county there are 259 registered physicians Of these, 55 are not available for service either because they have retired or are needed in institutions

Under the 21- to 35-year age limit for the draft, 90 of these would be subject to call Thirty-seven would come under a 30- to 40-year registration, and 28 under a 41-45-year limit, making a total of 155 in the 21- to 45-year age group

A survey of hospital facilities shows that the number of beds in four Triple Cities hospitals can be expanded from the present 1,108 beds to 2,210

"This means," the survey points out, "that 2,210 beds can be utilized without putting up new buildings or entirely equipping old buildings, that these beds will all profit by being under the same roofs that house operating rooms, x-ray equipment, kitchens, and laundries"

It also "means that the determining factor is not the number of beds available but the number of doctors available to care for the civilian population as well as any Army casualties The greater the number of war casualties, the greater the number of doctors drawn to the front and the less the number of doctors left behind"

Columbia County

Dr Leonard M Niesen, of Hudson, was guest speaker at a meeting of the medical society on October 1, at the Hudson City Hospital Dr Niesen spoke on "The Diagnosis of Tuberculosis"

Dutchess County

Dr Charles Gilmore Kerley, New York City, spoke before the county society on October 16, at the Amrita Club His topic was "Thyroid Gland Abnormalities in Infancy and Children."

Greene County

The quarterly meeting of the county society was held at the Memorial Hospital on October 8

The Mid-Hudson Regional Fracture Commit-

tee of the American College of Surgeons conducted the scientific program with papers by Dr James T Harrington, chief of staff of Vassar Hospital, and Dr A W Thompson, at tending surgeon of St. Francis Hospital, Poughkeepsie Refreshments of spaghetti and meat balls were served after the meeting

Herkimer County

The county society met on October 8 in the Mohawk Valley Country Club Dr H Dan Vickers, Little Falls, spoke on "Surgical Aspects of a Major Railroad Accident"—the wreck of the Lake Shore Limited on Gulf Curve in Little Falls last April

Jefferson County

The regular monthly meeting of the medical society was held on October 10 at the Black River Valley Club following dinner Dr William P Van Wagenen of the Strong Memorial Hospital, Rochester, brain surgeon, spoke on "Head Injuries"

Kings County

The clinical committee of the county society presents on November 4 at 4 00 P M an address on "Tuberculosis in Children" by Dr Morris Steiner and at 4 45 an address on "Virus Diseases" by Dr Leo Loewe It also presents on November 11 at 4 00 P M an address on "Rheumatic Disease" by Dr Paul L Parrish and at 4 45 an address on "Parasitic Diseases" by Dr Mendel Jacoby

Monroe County

Medical men of Monroe County participated in a "Teaching Day" program on October 9 in the Rochester Academy of Medicine Auditorium

Subjects and speakers were "Arthritis," Dr Russell L Cecil, Cornell University College of Medicine, Ithaca, "Backache," Dr Samuel Kenberg, New York, "Thyroid Diseases," Dr Merle Scott, University of Rochester School of Medicine, and "Gonorrhea," Dr Walter Clarke, medical director of the American Social Hygiene Association

The program was arranged by Dr O W H Mitchell, Syracuse, chairman of the public health and education committee of the State Society, in cooperation with Dr Sol C Davidson, chairman of the Monroe County Committee on Postgraduate Education

Tributes were paid to three pioneer physicians by 300 Rochester doctors in the first fall meeting in the Academy of Medicine on October 1

Resolutions were adopted in memory of Dr Sarah Pierson, former member of the staff of Rochester State Hospital, Dr George Goler, former health officer, and Dr Frederick W Zimmer, who had been president of the Board of Education

"Great improvement in recent years in treatment of heart disease" was announced by Dr Samuel A Levine, associate professor of medicine in Harvard Medical School He declared heart ills are well treated by the general practitioner

Dr Levine was introduced by Dr Leo F Simpson, new president of the Academy, who

presided at this meeting for the first time in his new capacity

Nassau County

People should give the same amount of care to their physical mechanisms as they do to the mechanism of their cars J Louis Neff, executive secretary of the county society, said at the Freeport Kiwanis Club's dinner meeting in the Elks Club on October 2

One of the strangest things in this world " Mr Neff said "is man's supreme ability to neglect himself The average man takes good care of his car, seeing to it that every part functions properly but the man who gives most care to his car is apt to be the man who gives least thought to himself—he is the big, strong guy who can get along without help "

Mr Neff who was introduced by Dr William Smith of the New York State Department of Health showed a motion picture "Bobby Goes to School," which stressed the need of periodic health examinations for children of preschool age After the film had been shown the club voted to try to interest local parent-teacher associations in sponsoring its showing in the local schools

New York County

At a meeting of the Committee on Military Preparedness in conjunction with the Advisory Committee on Military Preparedness of the Medical Society of the County of New York on September 12 Dr Kopetzky brought up a suggestion from the Governor for a project he would like to have sponsored by this society—namely the establishment in the hospitals of catastrophe units ready to go out in emergencies Police districts are soon to be allocated in the city, and there should be at least one or two catastrophe units in each district Four units are already established—at Bellevue, Morrisania, and Grasslands hospitals, and one for Kings and Queens counties, but more are needed Mayor La Guardia wishes the head of each unit to have police powers so that they may have immediate access to the injured

Commissioner Rice stated that the Health Department now has a setup for emergencies whereby in case of a major catastrophe from 700 to 800 nurses and 200 doctors would be available for any given location

Oneida County

Sixty physicians affiliated with the county society inspected the new Rome Hospital following a luncheon on October 8 Dr Paul P Gregory of Rome was chairman of arrangements Following the luncheon and inspection the Reid Rome physician now in active service as assistant professor of military science and tactics at Syracuse University Medical College and by Dr Lawrence F Drum and Dr Walter S Pugh, both of Utica The three speakers touched on various phases of Military Medicine

Onondaga County

The first of a series of Teaching Days for the members of the county society was held October 1 at the Syracuse Memorial Hospital The subject was Rheumatic Fever Principal speaker was Dr Homer F Swift of

MEDICAL NEWS

the Hospital of the Rockefeller Institute for Medical Research, New York City He conducted a clinic at the hospital during the afternoon and presented a paper on the subject at the evening session Discussion was opened by Dr Edward C Reifenshtein and Dr J G Hiss of Syracuse

The first of a series of nine medical conferences on chest diseases planned for Syracuse physicians opened on October 3 in the College of Medicine Syracuse University, with Dr Orrin D Chapman and Dr J Howard Ferguson, both of Syracuse Medical College, as speakers The series is sponsored by the county society and more than 100 physicians have registered for the course All conferences are in the medical college except one on October 19 which was in Biggs Memorial State Hospital, Ithaca, and one October 31 at the Onondaga Sanatorium

Ontario County

More than 300 doctors from Ontario, Seneca Wayne Yates, and other counties attended a joint meeting of the Ontario County Medical Society and the medical staff of the Clifton Springs Sanatorium on October 8

The doctors were the guests of the sanatorium at dinner as a part of the celebration of the nineteenth anniversary of its founding by Dr Henry Foster

The annual business meeting of the society was held in the assembly room of the Woodbury Building Dr Albert Odell, Clifton Springs president of the society, was in the chair Dr M A Blankenhorn, professor of medicine University of Cincinnati gave the first paper in the chapel on "Modern Treatment of Nutritional Disease" Dr Joseph C Done, professor of clinical medicine Temple University, Philadelphia spoke on "Endocarditis, Treatment with Heparin and Sulfapyridine."

The dinner meeting was held at 6 45 followed by an illustrated lecture on "Diagnosis and Treatment of Intestinal Obstruction by Miller-Abbott Tube" by Dr Ross Golden, professor of radiology Columbia University The last paper "Use of Silk in Surgery," was given by Dr Donald Guthrie chief surgeon Guthrie Clinic Sayre Pa

Rensselaer County

More than 30 medical specialists from area cities met at dinner in The Hendrick Hudson Hotel in Troy for a meeting of the Eastern New York Eye Ear Nose and Throat Association on October 3

Dr Raymond E Meek of New York addressed the scientific session on "Care and Management of Strabismus in Infants" The association extended an invitation to all general practitioners to be their guests at the next meeting November 7 at the hotel, when a prominent physician will speak on a subject of general medical interest

Richmond County

Dr Foster Kennedy professor of neurology at Cornell Medical School director of the department of neurology at Bellevue Hospital and a noted lecturer and author addressed the county society on October 9 Dr Kennedy spoke on "Science Civilization

and Faith." Members of allied professions on the Island—nursing, dental, and pharmaceutical—were invited to hear the doctor's talk. Dr Herbert A Cochrane presided

Rockland County

Dr E Jefferson Browder, clinical professor of surgery at the Long Island College Hospital and director of a number of Brooklyn hospitals, was guest speaker at the regular fall meeting of the society, held at Letchworth Village on October 2

Dr Browder discussed "Head Injuries," their diagnosis and treatment, accompanying his address by showing stereopticon views Dr Browder observed that in approximately only 10 per cent of head injuries was surgery required, the balance of cases responding more satisfactorily to external treatment.

Approximately 60 members were present at the meeting over which President Russel E Blaisell, superintendent of the Rockland State Hospital, presided Following the discussion, the members were dinner guests of Dr Henry Storrs, superintendent of Letchworth Village.

The Tuberculosis Sanatorium Conference of Metropolitan New York held its fall meeting at the Summit Park Sanatorium, Pomona, on September 25 About 100 members were present The following was the scientific program (1) "Methods of Controlling Tuberculosis in Rockland County," by Dr William J Ryan, superintendent, Summit Park Sanatorium, discussion by Dr William Siegal, director, Division of Tuberculosis, New York State Department of Health (2) "Dental Service in the Tuberculosis Sanatorium," by Dr Samuel Berg, visiting dentist, Summit Park Sanatorium, discussion by Dr David Tanchester, attending dentist, Montefiore Hospital for Chronic Diseases (3) "They Do Come Back," new N T A Sound Film, a story of rehabilitation of the tuberculous—introduction by Mr Holland Hudson

Schenectady County

Dr Frank van der Bogert, a leading pediatrician of Schenectady, died on September 24 at the age of 67

A former president of the county society, he had particularly distinguished himself in its work by serving as chairman of its program committee for the last twenty-five years It was through his efforts that so much outstanding medical talent was brought to Schenectady to address the local society on new developments in medical science

He was chairman of the military preparedness committee of the society and represented the society on the defense committee recently appointed by Mayor Mills Ten Eyck His war work reached into the humanitarian field as well, for he was chairman of the Queen Wilhelmina Fund, created to seek financial assistance for Dutch war refugees

Resolutions adopted by the county society say in part

WHEREAS it has pleased Almighty God in His infinite wisdom to remove from our midst Dr Frank van der Bogert, the Schenectady County Medical Society desires to publicly acknowledge their indebtedness to him as a friend, counselor, and physician.

Dr Frank van der Bogert was a man of sterling qualities, a man of strong convictions

which he did not hesitate to express, a gentleman whose conduct with his fellow professional friends and the community was never questioned. His influence with the younger men of his profession as a teacher and counselor was profound. He was loyal to his alma mater, and his sense of duty to his practice was a revelation to men who knew his works.

He numbered among his friends many hundreds of physicians whom he brought to Schenectady as his guests to encourage the scientific progress of the whole medical profession of the capital district. The record of his life will be an inspiration to many physicians for years to follow

—Reported by J H Naumoff, M.D., Secretary

Schoharie County

Dr Herbert L Odell, 81, widely known physician and leader in community affairs, died at his home in Sharon Springs on September 27 He had practiced medicine fifty-seven years

He was keenly interested in everything that touched the physical or spiritual welfare of those about him Dr Odell was the first president of the Schoharie County Medical Society, secretary for thirty years, president of the Third District Branch of the State Society, and member for over forty years and long-time president of the Sharon Springs School Board.

Steuben County

Members of the Hornell Medical and Surgical Society gave special recognition on October 3 to Dr George L Preston, of Canisteo, for his fifty-eight years' service in the medical profession. Thirty members were present at the meeting held at the Country Club

Dr Preston began practicing medicine in 1882 and has spent most of the time since in Canisteo He has been health officer there for many years.

Dr Charles Rose, president of the medical group, introduced Dr Preston, others who spoke were Dr J E Crossman, of Canisteo, Dr John A Conway and Dr O K Stewart, of Hornell, and Dr Lewis Preston, of Salamanca, son of the honored member

Tioga County

All officers of the county society were renominated for the ensuing year at the annual fall luncheon held on October 2 at the Weller Hotel in Chemung Those nominated are Dr C J V Redding, Owego, president, Dr John B Schamel, Waverly, vice-president, Dr Ivan N Peterson, Owego, secretary treasurer, Dr W A Moulton, Candor, delegate to state convention, Dr A. C. Hartnagel, Berkshire, alternate delegate, Dr F H Spencer and Dr F A Carpenter, Waverly, and Dr William Gregory, Owego, censors

The officers will be elected at the December meeting The nominating committee consisted of Drs L S Betowski and F K. Shaw, Waverly, and John Jacques, Candor

The society heard an address by Charles K. Herrick, of Binghamton, state parole officer, who outlined the cooperation between police and medical men

A resolution of regret at the death of Dr Guy S Carpenter, late of Waverly, was adopted unanimously

Hospital News

Defects in the Appointment of Interns

A CRITICISM of the present method of appointing interns in some hospitals is made by Dr. William Dock, of the Stanford University School of Medicine, and is considered important enough by the *Journal of the American Medical Association* to print it as its leading article in its annual Educational Number on August 31. Certain undesirable situations arise, he declares whenever the dean or the administrative office of a medical school is actively concerned with obtaining appointments for senior students. These bad effects, he explains, are most strikingly seen when the fifth or intern year is required for graduation. There the school must intervene not merely to supervise the choice but actually to guarantee the placing of the student. If the dean or a faculty member or committee has to guide the student or even help him to secure an internship, the school to a greater or lesser degree must appear as a petitioner for favors from hospitals.

Beggars cannot be choosers and certainly cannot be critics, so that the school or its representative must pass lightly over the defects of the institutions kind enough to accept the eight or ten students at the bottom of the class. Also once the school has recommended a man for internship and has begun to count on placing its men in certain institutions, it will find reasons for not allowing any senior student to fail. To do so would put it in the position of reporting a few weeks before the service begins, that Mr. X, recommended as a competent man in November, has failed to complete his fourth year. This would jeopardize the chance of placing men in that hospital in the future. Hence a distinct drop occurs in the work of the less diligent third or fourth of the senior class in schools where, because of custom or the fifth year rule, the student relies heavily on faculty help in securing his internship and preventing his failure.

It would be a decided tonic to the morale of medical students and of deans and committees on promotion if the school and its staff confined themselves to supplying students with a list of recommended internships and sending hospitals a record of scholastic accomplishment and relative class standing of each student who applied for internship.

No personal recommendations should be supplied in an official way, and hospitals should demand personal interviews or reports from reliable and disinterested third parties preferably practitioners in the community who were former interns or colleagues of men on the hospital staff. The whole responsibility for choice and attainment of internship should rest on the student who should realize by the end of his second year that the sort of internship he may look forward to depends on his scholastic record and the good impression he makes on staff members of the hospital he hopes to enter.

There is another evil consequence of medical school solicitude over placing its students in hospitals which is also most apparent where the

fifth year is required for graduation. This is the tendency to fill with its own graduates most of the positions in the services that the medical school controls and uses for instruction. This practice has a pernicious effect both on the interns and on the undergraduates. It may diminish the effective competition for positions and lessen the zeal of the best members of the class, to whom these positions normally go since they have little to fear in the way of outside competition and their relative positions are pretty well determined by the third year.

It surely lessens the drive and lowers the morale of the interns who do not start off in a fresh environment among new associates all anxious to establish a good record for themselves and for the school from which they come. Instead they run on in the same rut and with the same "gang." With the increasing participation of students in the life of the wards, clinics and operating room, the interns and residents have become even more important than the chiefs and staff members in molding the habits and attitudes of undergraduates. From the staff they pick up tricks of speech or of thought but from the interns they absorb the working methods and the reactions to patients and to investigation which will determine most of their professional conduct.

The selection of interns and residents with a view to getting the best possible men and having them work under conditions that will bring out their finest efforts and behavior is therefore, the most important duty of the staff of a teaching hospital not merely that the opportunity for graduate teaching should not be dissipated but in order to have undergraduates live in the best possible professional atmosphere. The necessity for selecting the best interns and for assembling a group trained in various schools and constantly on their toes is so urgent that it should not be weakened by pleas to absorb as many local graduates as possible and diminish the chore of placing an entire class. To win the gratitude of shy or backward seniors by helping them avoid the responsibility for finding hospital positions or moving into a strange environment, one must accept responsibility for lowering the whole level of graduate or undergraduate work.

The limitation of enrollment, the increase in laboratory and ward work, and the emphasis on hours of credit rather than on learning have all contributed to slow down or stop entirely the free movement of medical students from one school to another.

The changes of the last forty years have steadily diminished the differences between the work of the last two years of medical school and the first year of internship. Since there can be too much even of good things and since it is possible that "one good custom should corrupt the world," it is desirable that most students should not intern in the wards where they worked as juniors and seniors but should see new methods hear new teachers, and work with new companions.

Any change in methods of appointment of interns that increases the movement of medical

students from one center to another at this stage of their development is certain to raise the level of internship in hospitals having university connections, and gradually this will have an effect on all hospitals. Customs that increase inbreeding of the hospital staff and make circulation of young medical men more difficult are truly harmful.

Three Criticisms of New Hospital Legislation

IN REVIEWING the reports of national health legislation, three very important facts are to be noted, says the editor of *Hospital Management*.

First, there is the impression that new hospitals in new areas are very urgently needed. A careful study of hospital service in the United States is sufficiently near completion to show clearly that there are very few areas in the country which are in urgent need of new construction. On the other hand, there is a very definite indication for improving the smaller hospitals that are at present being operated. Many of these are unable to meet recognized standards, and, in almost all cases, the only reason for their inadequacy is lack of funds.

While the federal government will not be entering the hospital field under the new acts, the hospitals proposed will be turned over to local government agencies after they have shown that they are able to operate them. This is only substituting one form of government ownership for another. Experience has shown that any government ownership has the grave danger of political interference, and of the two forms we prefer federal to local for the simple reason that federal projects are less subject to petty politics.

A third weakness is that, although many studies have shown that there is inadequate provision for the care of the Negro population they are still ignored to too great an extent. In the country today there is an enormous number of these people who, until recent years, have been given no opportunity to advance. Since they have been given opportunities for improvement, they have made rapid strides, but they are still unable to care for themselves. We must give them further opportunity to improve their status until they are able to provide for themselves, but until they have become self-sustaining we must furnish the care which they need. For this section of the population there is great need for new construction or for increased provision of care in present institutions.

Newsy Notes

The will of the late Mrs Marie Engert-Colman, whose recent death occurred in England, contained bequests of \$30,000 each to these hospitals: St Peter's, St Catherine's, Wyckoff Heights, Long Island College, all of Brooklyn, Mary Immaculate, Jamaica, St Vincent's, Manhattan, St Mary's, \$50,000 and proceeds of sale of her jewelry, also, \$25,000 each to Faith Home for Incurables, Brooklyn Visiting Nurse Association, House of St Giles the Cripple, and Brooklyn House for Consumptives.

Montefiore Hospital will utilize its facilities to train members of the National Youth Adminis-

tration in hospital duties. The course will be in charge of Miss Helen M. Harris, New York City administrator of the N Y A.

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The recently filed will of the late Carlos W. Munson contains bequests of \$25,000 to the French Hospital, Manhattan, and \$50,000 to the St. Francis Sanatorium for Cardiac Children, at Flower Hill, Roslyn, Long Island.

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Territory of the Rochester Hospital Service Plan is enlarged with announcement that operations have been expanded to include Ontario County.

Under the extension, contract has been made with Clifton Springs Sanitarium to give hospital service to subscribers and dependents. This brings to nine the total number of hospitals available.

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A Utica paper reports that recently the staff of the local hospital plan "really had the jitters."

In the morning's mail came a bill from the Samaritano Hospital, São Paulo, Brazil, charging the Hospital Plan, Inc., 218,000 reis, Brazilian money.

The bill was for services given Arnold J. Conlin, Dolgeville, a Hospital Plan subscriber since July 1, 1938. Last May he was hospitalized in São Paulo, and, taking advantage of his hospital insurance, sent the bill in for payment.

The Samaritano Hospital is not, of course, affiliated with the Plan but it is the practice to make allowances for care of members in non-affiliated hospitals up to a certain amount.

Conlin's bill for 218,000 reis might or might not have called for a lot of money. Harold C. Stephenson, managing director of the Hospital Plan, Inc., did not know.

He sent the bill to a bank and officials there sent it to New York. Stephenson sighed with relief when the report came back.

The reis, it turned out, is one of the smaller of Brazil's monetary units and at present rates of exchange, a milreis, or 1,000 reis, is worth a little more than five cents in American money. On that basis, the bill for four days' hospitalization and medication was only \$11.23.

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The Irish Hospital Trust, which for ten years has conducted the famous Irish Sweepstakes and distributed \$46,703,000 or approximately \$168,000,000 in prizes, is closing its books and going out of business because of the war. Joseph McGrath, managing director, told reporters that a new company would be formed that would include sweepstakes promotion in its activities "if it is decided to continue them under the existing conditions."

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With tentative plans completed, work will probably start next spring on a project calling for the enlargement of the General Hospital of Syracuse into a quadrangular building equipped with seventy more beds than at present, Carl P. Wright, superintendent of the hospital, announced.

The Woman's Auxiliary

To the Medical Society of the State of New York

Dear Auxiliary Members

We are grateful during these tense days for a brief respite from thoughts of war as our attention is directed to the programs presented by our many affiliations. These appear concerned with more vital objectives appealing to the intelligence, with less of the social and more of the serious. Also appreciated is the tremendous challenge to individual responsibility if our way of living is to endure.

Similar characteristics as these could not fail to mark distinctively the Auxiliary's activity program, since our loyalties and interests are dedicated to the medical profession. It is not our policy to initiate but to follow, discreetly assisting in a manner befitting our position. With our doctors organized for a national emergency, the charge to the Auxiliary would seemingly unfold greater responsibilities and further avenues of service. And as our National Auxiliary president has proclaimed to us, 'If the work of the Auxiliary is to go forward, it must be done in the 'spirit of service to Humanity'. All selfish aims must be set aside, idealism become realism, and all Auxiliary activities more closely correlated.'

While considering here the salient points of our Auxiliary program, we shall leave it to your state chairmen to tell you further of their committees' constructive plans.

Of primary importance is the service we may

render in the field of Public Relations. We have been told "that the responsibility rests upon us to make clear to all people the ideals and possibilities of the medical profession."

Our main objective, Health Education, demands self-preparation before we may assist other organizations. In legislative matters we follow the program of the State Medical Society, but acting only under advisement. It is hoped that an impetus has been given to the formation of auxiliaries in the remaining unorganized counties, so that our chain of many links will indeed be a strong one.

We have observed that wherever the Auxiliary has had a guiding hand from the county society, the work has proved successful. While many counties are carrying on worth-while local philanthropic projects, the physician's home will continue as our state interest. In the midst of so much that must be serious, it is hoped that the pleasant social precedents you have set will continue to spread friendliness and good fellowship among physician's families over our state.

And while we do remember that formerly 'woman's place was in her home' today with the many time and labor-saving devices at her command surely, woman's place is being as helpful as possible in her sphere of life."

Sincerely yours,

(Mrs L H) HENRIETTA STEWART KICE,
President

County News

IT MAY be of interest to our readers to know the names of the counties that are now organized. They are Albany, Broome, Cayuga, Columbia, Erie, Essex, Fulton, Herkimer, Jefferson, Kings, Madison, Nassau, Oneida, Onondaga, Orange, Oswego, Queens, Rensselaer, Rochester, Saratoga, Schenectady, Suffolk, Sullivan, and Washington.

Cayuga. The first fall meeting was held September 19 at the home of Mrs George B Adams. Fifteen members were present and ten women from Seneca County who are interested in forming an auxiliary. The meeting was devoted to acquainting the guests with auxiliary work. A social hour to which the doctors were invited closed a pleasant evening.

Columbia. A joint meeting was held with Albany County when the meeting of the Third District Branch was held in Albany. Mrs William D Collins presided. The main feature of the program was to explain the purposes of the organization to the doctors' wives of unorganized counties.

Herkimer. The auxiliary members met the doctors' wives who came to the Fifth District Branch meeting in Little Falls on September 24. Highlights: a sightseeing trip through Cannan-johann, lunch at the Beech Nut Hotel, and a trip through the Beech Nut Plant.

Saratoga. Mrs L H Kice, state president was the guest speaker at a well attended meeting in Saratoga Springs on October 2.

The standard of our Auxiliary is service to humanity and to march in its progress," was the keynote of her address.

Members of this county were busy during the summer—cooperating in a sale held by the blind and working in the health booth during the county fair. A Health Institute was planned for October. Mrs Thomas E Bullard, of Schuylerville, president, entertained the executive board at a luncheon meeting. Reports were given and plans outlined for the year.

Schenectady. Ninety-one doctors' wives attended the day's activity at the meeting of the Fourth District Branch of the Medical Society at Schenectady. Guests included ladies from Amsterdam, Saratoga Spa, Saranac Lake, Glens Falls, Gloversville, and Hagsan. Those attending were fortunate to hear Mrs L H Kice, of Garden City, and Mrs R F Johnson, of Auburn.

The committee on arrangements were Mrs F Leslie Sullivan, chairman, Mrs A W Greene, finance, Mrs L P Tischler, registration, Mrs E M Stanton arrangements, Mrs W McDonald, entertainment, Mrs John Younie prizes, Mrs Frank van der Bogart courtesy, Mrs J Cornell, transportation, Mrs William Mallia, flowers and table decorations, and Mrs N H Rust, publicity.

SUBSCRIBE TO THE BULLETIN

GOAL 6,000

Here you find a detailed description of the *Bulletin*, the official publication of the Woman's Auxiliary to the American Medical Association.

The Woman's Auxiliary to the American Medical Association is making a special effort at this time to awaken widespread interest in its activities, by increasing the number of readers of the *Bulletin*!

This little booklet is a successor to the *News Letter* which had, for many years, kept the officers and board members acquainted with the progress of the Auxiliaries of all the states. It is published quarterly and contains reports of conventions, plans of work, inspirational messages from leaders, and news of the hour in the medical world.

It is a great help in promoting interest in local auxiliaries especially where the program is new.

The fall issue contains the inaugural address of Mrs V E Holcombe, the National Auxiliary president, also, a message to women from Dr Van Etten, president of the A M A. Many other interesting items are to be found within its forty pages. It is hoped to have 6,000 women, one-fourth of the membership, reading the *Bulletin* before the year is over. In this way the members may keep abreast of the trends in the medical world and thus be better able to function as members and leaders of the auxiliaries—local, state, and national.

The cooperation of the advisory councils and the good will of all members of the Medical Association is earnestly requested.

Mrs George H Ewell, *Editor*

Mrs H E Christenberry, *Circulation Manager*

NOTE: Subscription blanks may be obtained from Mrs E A Griffin, State Circulation Manager, 311 Garfield Place, Brooklyn, New York.

"WHICH AM I"

(From the *West Virginia Club Woman*)

Are you an active member, the kind that would be missed,

Or are you just contented that your name is on the list?

Do you attend the meetings, and munge with the flock,

Or do you stay at home and criticize and knock?

Do you take an active part and help the work along,

Or are you satisfied to be the kind that "just belong"?

Do you ever go to visit a member who is sick,

Or leave the work to just a few and talk about the clique?

So come to the meeting often and help with a hand and heart,

Don't just be a member but take an active part
—K. F.

LABORATORY AIDS IN DIAGNOSIS OF SUBACUTE BACTERIAL ENDOCARDITIS

Subacute bacterial endocarditis is a disease the symptoms of which vary markedly in degree. Early in its course a definite diagnosis is difficult to establish. There is often little more evidence than low-grade fever, malaise, slight clubbing of the fingers, a few red blood cells in the urine, and indications of pre-existing valvular damage. More advanced cases usually present the classical syndrome of "café au lait" appearance, spiking fever, prostration, enlarged spleen, and a variety of embolic phenomena. It is in the initial stage that laboratory aid is essential to rule out such diseases as undulant fever, miliary tuberculosis, subacute exacerbation of rheumatic fever, and typhoid fever.

Streptococcus viridans is the usual inciting microorganism, but in a small percentage of cases subacute bacterial endocarditis results from infection by other microorganisms such as the influenza bacillus, the gonococcus, the non-hemolytic streptococcus, and, in still rarer instances, the pneumococcus, the last-named microorganism, however, is far more apt to cause an acute endocarditis.

The mortality approximates 100 per cent.

LABORATORY AIDS IN DIAGNOSIS

1 Blood Cultures The diagnosis of subacute bacterial endocarditis is greatly aided by the isolation of the microorganism from the blood. In view of the fact that in this disease the peripheral blood may have "bacteria-free" intervals, specimens should be withdrawn for culture frequently. The repetition of these examinations should be continued until the inciting agent is isolated or the clinical course no longer suggests subacute bacterial endocarditis as a possible diagnosis. If this condition is suspected, a conference between the attending

physician and the bacteriologist is important not only to aid the latter in his study of the specimens but also to aid the physician in collecting them by special methods when required. The incitants are sometimes anaerobic upon first isolation.

2 Urinalysis Because of embolic glomerular lesions in the kidney, microscopic hematuria is an almost constant finding at some time in the course of the disease. In suspected cases, therefore, the urinary sediment should be searched daily for the presence of red blood cells.

3 Blood Counts Secondary anemia is always present and may be severe. A moderate leukocytosis is usually found with a corresponding increase in the percentage of polymorphonuclear leukocytes. Also, in some instances there is a definite monocytosis, and this is helpful in establishing a diagnosis.

4 Sedimentation Rate The sedimentation rate of the erythrocytes is increased, but it is of more value as an index of the intensity of the infection than as a differential diagnostic aid. The significance of a rapid sedimentation rate may be obscured by the presence of an active rheumatic infection upon which the subacute bacterial endocarditis is often superimposed.

5 Electrocardiogram Because the pathology in this condition is fundamentally in the endocardium, the electrocardiogram may be essentially normal. If the inflammatory process extends into the underlying myocardium, electrocardiographic changes may occur. It is to be stressed, however, that in subacute bacterial endocarditis a normal electrocardiogram is of no differential diagnostic value.—Issued by the New York State Association of Public Health Laboratorians, Leaflet No 15

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Editorial

"Thanks for Everything"

As the end of the year approaches, the *New York State Journal of Medicine* finds itself bringing to a close the second year of publication under its own management. Every detail of publication, including editorial, advertising, and circulation, has been under the direct control of officials and executives of the Society.

It is not for us to say whether the editorial content has improved in quality. Every once in a while a reader gets real mad and writes in that we are wasting his time and our own by printing the publication at all. Occasionally a reader takes his pen in hand and tells us he likes the stuff we print. If there were more of both sorts, it would help.

Perhaps an inkling can be obtained as to how well received we are if a glance is taken at the subscription list. First, of course, are 17,350 physicians in New York State who receive the JOURNAL because it is the official organ of their Society. They get it without paying any subscription price other than their annual dues. How many other persons care enough about it to pay the regular cash subscription price of \$5.00? The answer is 572. The list comprises physicians, hospitals, libraries, universities, insurance companies, and laymen. Of these, 309 are resident in New York State, 263, in other states.

Not that it proves anything at all, but New Jersey heads the list with 32, then comes California with 22. Gold stars go to Connecticut, 18, Illinois, 13, Massachusetts and Ohio, 12 each, Pennsylvania, 11, and Georgia, 10.

A prophet may be without honor in his own country, but if his fare is paid to go to other countries it means that somebody thinks what he has to say is worth the price.

During these last two years the advertising patronage of the JOURNAL has steadily increased. Prospects for 1941 indicate further

improvement For this direct contribution to medical education, we are deeply appreciative The important national manufacturers who *can* get in this paper but are absent grow fewer month by month The JOURNAL is coming to be widely recognized as having the largest circulation with the greatest buying power of any state medical publication—in fact, in circulation, it is second only to the *Journal of the American Medical Association* among all official medical periodicals

Paul Revere—1940

"The American Medical Association has already started to organize the medical profession [for military service]," says the *New England Journal of Medicine* for October 10, 1940 "And yet with all this talk and activity one can sense beneath the surface a feeling of unreality, as if we truly believed it all to be an uncomfortable dream, from which we shall awaken to plod along again in our comfortable middle-class fashion "

So, in 1789, believed most of the profession in France In many ways the economic and philosophic situation of the present day is not dissimilar to that of France in 1778 when Lafayette returned to join the States-General in the turbulence of the early days of the war with Austria and the revolution The profession of medicine here, however, is conservative in its philosophy and practice It is generally isolated from and relatively indifferent to political change and economic disturbance That is, it has been in the past

But never before in this country, since 1783, when the Treaty of Paris officially ended the War for Independence, has that independence been seriously threatened The feeling of unreality sensed beneath the surface, which the *New England Journal of Medicine* senses, the uncomfortable dream is premonitory of an upheaval of such proportions both psychic and somatic, political and economic, as this Nation has not known within the memory of any living person It is premonitory of the end of an era of dreams, of self-laudation, of "comfortable middle-class fashion," of regular "hot breakfasts ready on the table," of complacency

It is well that there are those like the editors of the *New England Journal* who have the foresight and courage to warn the profession of what is to come! It is perhaps a legacy from Paul Revere "A common danger to which we shall eventually become fully awake may yet prove to be our moral, political and economic salvation," they hope To which we reply Eventually? *Why not now?* We realize fully that it is a monumental task to rout the average physician out of his usually commendable preoccupation with the routines of his art and science He does not attend his

county society meetings as he should, he reads his journals haphazardly, if at all, he leaves the administrative affairs of his societies to a few self-sacrificing officers and committeemen, and he grumbles about his dues. In these sins of omission lies a very real danger to the solidarity and unity of the profession. If the average physician cannot be reached through these established channels of communication because he is absent from meetings, because he serves his profession on no committee of his county or state society and does not know what it is all about, and because he fails to read his medical journals, how is he to be reached? What force short of a bomb or shell explosion can penetrate the armor of such indifference? Editorials?

"Men now living will not again walk down the primrose path of the last few decades" warns the *Journal*. Some men, we have observed in sorrow, have not bothered even to walk down them, content evidently with Milton's dictum that "he also serves who merely stands and waits"* We subscribe to the New England *Journal's* thought that a common danger may yet be our salvation. To which we are constrained to add that an even more pressing danger threatens the profession—indifference. Until this obstacle is overcome, how may we warn the profession of danger, common or otherwise?

* Sonnet on His Blindness.

Physicians in Uniform

During the last World War we had the opportunity of observing physicians in uniform. Just as a traffic cop is not at his best in his underclothes, so, we observed, many physicians did not respond well to the habiliments of militarism. Numbers of them donning a uniform for the first time seemed to be under the impression that to be consistent they must cultivate a certain fierceness, others apparently considered that they must develop a heel-clicking smartness and a barking speech to round out their concept of official deportment.

Spurs and salutes did not contribute, frequently, to the maintenance of that imperturbability which Osler astutely advised medical men to cultivate, since the former frequently caused sudden shifts in the personal center of gravity at odd moments and the latter were executed in such manner and variety as the imagination of the officer dictated.

Then, too, subtle personality changes made their appearance. Quite decent, affable physicians developed a cactus complex, a bristling, thorny untouchability usually accompanied by certain stigmas—small shoebrush mustaches, croplike pendulous tumors

dangling from the left wrist, and a dermatosis, resembling a small watch, usually on the left but sometimes on the right wrist hidden by the cuff. This was evidently an intermittent source of irritation, producing a sudden jerky forward movement of the left arm, a crooking of the elbow, and a nervous inspection of the area doubtless to ascertain the rate of growth of the lesion.

But the physicians were not the only ones affected by our former descent to a too hasty militarism. Tailors, too, seemed to lose their wonted skill in many instances. The classic forms of many disciples of Galen were singularly distorted, compressed, and caused to bulge in an extraordinary manner never seen in civil life by uniforms doubtless designed, cut, and sewed under the influence of war hysteria. The old uniforms repose in trunks in countless attics where we hope they will remain for the sake of our professional dignity. But what of the new ones?

Inevitably, we shall see the reappearance of many of these phenomena. But since we embark upon a training period before entering upon actual hostilities, may we suggest that possibly the harshness of some of these cruder phenomena of military life might be mitigated by appropriate instruction? Modern warfare is hard enough upon noncombatants without unnecessarily subjecting them to the sight and ministrations of officers who are only half physicians and physicians who are but half officers. On behalf of the profession we urge consideration of a course in deportment while there is time.

The Hornet's Nest

The recent formation in the Westchester County Medical Society of a general practitioners' section marks the beginning of a movement which should have every encouragement and stimulation. The various specialties have long been organized with beneficial results not only to their own smaller groups but to the enhancement of the interests of the profession generally. The general practitioner, however, the front-line man of medicine, has been kicked about. Everybody has told him where to get off. Educators, his brethren the specialists, editors, research students, pharmaceutical detail men, his patients' relatives, and advertisers have had him in a sort of protective custody which at last, seemingly, has produced a reaction toward consolidation.

The organization of such a reactive movement will not be without its difficulties. In the ranks of the general practitioners are some of the staunchest individualists in the profession of medicine. A general practitioners' section once in session should have many of the well-known characteristics of a hornet's nest. But we think some nests of that kind are badly needed here and there. The call

at the moment is for competent leadership of these sections. Little will be accomplished if the hornets merely mill around and sting each other in the mere sensuous enjoyment of their exuberant individuality. But with a few leaders to direct competently and judiciously some well-planned and expeditiously executed forays into the camps of the haughty surgeons, the snooty specialists, the public health picnickers, and the welfare weevils, anything can happen. And we hope it does. Good luck, G. P.'s and good hunting!

A Tooth for an Eye

That an infection resident in one part of the body can play havoc with some other organ while in itself exhibiting little or no local manifestation has been the subject of much controversy in our medical literature. The champions of focal infection are equalled by their antagonists—and fortunately so—since like the tide, the neap is reached only when the flood and ebb have run their course. However, to the practitioner of general medicine—he who must minister to all ailments—scientific discussions are of value only when some concrete, practical, and readily applicable form of therapy enables him better to serve his community.

In a paper by Lebensohn,¹ which has the intriguing title of "An Eye for a Tooth, or a Tooth for an Eye," there is set forth for all of us a concise estimation of the role that dental infections play in the production of ophthalmic diseases that may threaten loss of vision. All

¹Lebensohn J. E. Illinois M. J. 78: 174 (Aug.) 1940

parts of the eye, uvea, cornea, conjunctiva, sclera, and the optic nerve itself, have been affected by latent foci of infection located in the dental tissues. That this interrelationship is so readily determined is probably due to the fact that patients with ocular symptoms present themselves for medical care much earlier than sufferers from other ailments. The presence of an unsuspected periapical infection, located in osseous tissue which allows of no local expansion, may reveal itself in the form of a serious ophthalmic disease through a spread via the lymph and blood streams.

In all inflammatory diseases of the eye, with certain obvious exceptions, the doctor must be on the lookout for dental sepsis. Devitalized teeth, stumps, periodontitis, and vital pulps that are undergoing degeneration must be ferreted out, since in themselves they give no trouble to the patient until acute pain sets in. As Lebensohn aptly puts it "Artificial teeth function, but not artificial eyes."

Essential Hypertension

In the past, many diseases for which the etiology was not readily forthcoming were labeled as "idiopathic" or "essential." Clinical studies and laboratory investigation have taken many of these conditions out of the realm of uncertainty into the class of remediable disorders, easily recognized and successfully treated. Pellagra, scurvy, and some of the allergic states, to mention but a few, are now removed from the list of our "essential" diseases, but "essential hypertension"

remains as a condition that many clinicians still accept as an entity due to a single but unknown cause.

Williams and Harrison¹ attempted to solve this problem in their study of cases of so-called essential hypertension. They call attention to the comparative youth of the group that they studied, the mean being less than fifty years. Cases that had been diagnosed as essential hyper-

¹Williams, J. R. and Harrison T. R. Am. Int. Med. 13: 650 (1939)

tension revealed, not infrequently, masked urinary tract ailments, which in many instances were relieved by disinfection of the urinary tract. Other causes, often overlooked in the immediate examination were the endocrine, metabolic, and neurogenic factors which exert an influence on the blood pressure. They call attention to the increased blood pressure which, when it is noted, is so striking in children and young adults in whom a renal obstruction or new growth should be suspected by the physician.

While the problem of essential hypertension is still far from being solved, sincere investigation of Williams and Harrison gives us at present a new practical point of view. "Essential pertension" must no longer be considered as an incurable disease of undetermined etiology, it must be looked upon rather as a *symptom* based on aggravating factors that, no matter how obscure, can be brought to light by skilled examination and interpretation of a physician.

Correspondence

BOARD OF FOREIGN MISSIONS OF THE
METHODIST EPISCOPAL CHURCH

October 25, 1940

To the Editor

I am sure all your readers will be interested in the experience of Dr S H Liljestrand, missionary of the Methodist Church in Chengtu West China, along the Burma Road, and perhaps one or more readers may be interested in giving aid to his hospital. Dr Liljestrand (M D, Syracuse, 1915) is a native of Jordan, N Y, and has been in China since 1916.

The Women's Hospital connected with West China University, Chengtu, was completely destroyed in a fire which followed a Japanese air raid in August.

"The fire which destroyed the Women's Hospital, destroyed all of my cystoscopic and electrotherapeutic apparatus and the accessories of a general gynecological clinic," writes Dr Liljestrand. "Fortunately I had loaned a cystoscope to the Men's Hospital a block away. Also, the radium was saved, being in a patient that night. The patient was ambulatory. She went to a Chinese hotel because of the fire. In the

morning, her honorable husband informed us of her whereabouts, and the radium was recovered. I still have only 50 mg—but that is a mighty help.

"I lost a diathermy machine, an ultraviolet lamp, large size, three adult-size cystoscopes, one infant's and one children's cystoscope, and a vanic electric apparatus.

"The fire also destroyed our medical periodicals—including those on urology, surgery, gynecology, and obstetrics.

"I would be very glad if we could get second hand apparatus and used copies of medical magazines. There continues to be great demand for our service in this war-torn section of China."

If any of your readers are interested in assisting Dr Liljestrand with used but good condition material, will they please communicate with the Medical Department, Board of Foreign Missions, Methodist Church, 150 Fifth Avenue, New York City.

I trust you will be able to call this matter to your readers' attention. It will be greatly appreciated.

Sincerely yours,
WILLIAM W RE

SCIENTIFIC EXHIBITS

1941 Annual Meeting

Applications for space for the scientific exhibits should be made directly to chairman of Committee on Scientific Exhibits

Dr William A Krieger
103 Hooker Avenue
Poughkeepsie, New York

The Annual Meeting will be held April 28 to May 1, Buffalo, New York. The list will be closed on January 1, 1941.

PETER IRVING, M D, Secretary

Symposium on Chronic Diseases

PROGRESS IN OPHTHALMOLOGY*

ARTHUR J. BEDELL, M.D., F.A.C.S., Albany, New York

1 The Use of Sulfanilamide in Ophthalmology

Unique and spectacular cures focus the attention of professional workers and laymen on medical and surgical reports. Sulfanilamide and its numerous derivatives have held the center of the stage for several months and they will in all probability become permanent remedies for the cure or alleviation of many distressing and previously fatal diseases. The literature is replete with histories of astounding recoveries, but in no field has the effectiveness of sulfanilamide been more strikingly demonstrated than in ophthalmology. Sufficient experience has been accumulated to enable us to draw some positive conclusions which, although seemingly dogmatic in expression, are well substantiated.

The indications for the use of these drugs are the second or third stage of trachoma where there is corneal infiltration with vascularization and small ulcers. With this treatment the acute exacerbation becomes quiescent in a few days, more certainly and more often than with any other therapeutic measure. The cicatricial changes remain, but the patient is comfortable.

Chronic conjunctivitis characterized by the appearance of many small follicles often responds promptly. Acute streptococcus conjunctivitis is favorably influenced.

When the staphylococcus is the dominant organism, experience has been too limited to make a definite pronouncement, but success in some cases warrants a longer trial.

Severe and heretofore usually unchecked corneal ulcers are frequently cured. The extension of infiltration is controlled immediately, and healing is promptly started with surprisingly good end results.

Iritis of Neisserian origin has responded promptly, but iritis from focal infection has been unimproved. Interstitial keratitis has shown no change nor has any benefit been observed by the use of sulfanilamide in sympathetic ophthalmia or in uveitis.

From choice I have prescribed disulon (sulfanyl sulfanilamide), by mouth, 5 grains four times a day. The eyes are washed with boric acid solution, dark glasses are worn, and attention is given to plenty of fresh air and a well-rounded diet. Within five days there is usually a material improvement, sometimes the relief is beyond human conception and can be likened to a biblical miracle, for the photophobia disappears and not infrequently the patient is able to open his eyes for the first time in months. Relapses may occur, but fortunately they respond quickly to another course of treatment.

Instillation of sulfanilamide in the conjunctival sac is without effect.

When a physician has been trained to hospitalize his patient and to take frequent tests to regulate blood concentration, he reacts to this simplified treatment so intensely as to condemn it without trial. We advise suspension of judgment until after all the evidence has been presented.

Many articles have cited the complications that follow the ingestion of the drug. We have had erythemas suggesting

* When this paper was read colored photographs were used to illustrate the remarks.



FIG 1 Very deep and extending corneal ulcer

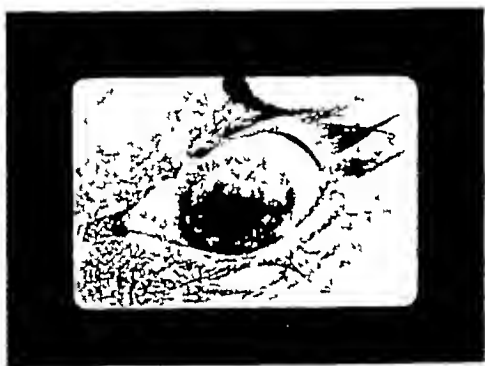


FIG 2 The same patient five days later. Complete healing. Five grains of disulou were taken four times a day.

scarlet fever in the intensity of color. Occasionally, patients have complained of nausea, vomiting, and diarrhea, but rarely fever. In only one case has there been a transitory ulnar neuritis. Otherwise, we have encountered no difficulties.

The ingestion of sulfanilamide is not without danger, but, in the doses here advocated and with the control by giving only a few tablets combined with a careful examination each time the patient is seen, there is no reason why this valuable agent should not be used more in the ambulatory treatment of the ocular infections. Sulfanilamide is not a cure-all, and much careful work must be done before a complete list of the ocular conditions favorably influenced by it can be completed. Meanwhile the drug can be used with safety if the precautions here men-



FIG 3 The classic form of night blindness. Thirty-three-year-old man. Bone-corporus shaped deposits of pigment in an equatorial zone.

tioned are taken. It is not improbable that some of the reported cases of upsetting symptoms following its use may have been from the disease and not the drug.

2 Night Blindness and Vitamin A

The medical and lay press have devoted much space to the consideration of night blindness, which, although known for centuries, has only recently, because of the activity of supersalesmen, obtruded itself on the consciousness of many physicians, instrument makers, and vitamin enthusiasts. There are two forms of night blindness: one a transitory functional decreased light sensitivity and the other a group of gross, permanent, and progressive retinal, choroidal, and optic nerve changes.

Five kinds of pathologic lesions are demonstrable.

Retinitis Pigmentosa—Retinitis pigmentosa is characterized by a progressive deposition of pigment that starts in an equatorial zone and extends both centrally and peripherally until eventually the entire fundus becomes more or less pigmented. When the disease has been present for years, the disk is muddy gray and both the arteries and veins are markedly contracted. A carefully taken visual field that at first shows a ring



FIG 4 Syphilitic choroiditis with night blindness. Equatorial zone of rounded, pale spots with heavily pigmented centers

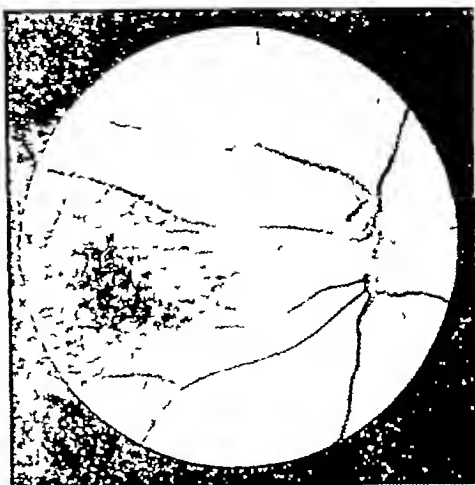


FIG 5 Choroideremia Complete disappearance of the choroid except in a small macular area Night blindness

scotoma ultimately becomes small and tubular

Retinitis Punctata Albescens—Another form is labeled retinitis punctata albescens. Fine white dots are scattered throughout the entire fundus. The spots never disappear, but after several years the choroid becomes degenerated and pigmentation similar to that found in retinitis pigmentosa is engrafted on the early changes.

Syphilitic Retinochoroiditis—Somewhat similar to retinitis pigmentosa in clinical manifestations is syphilitic retinochoroiditis. In this type of night blindness there is a peripheral or an equatorial zone of rounded, pale dots or spots with pigmented borders. The retinal vessels and optic nerve involvements appear later than in retinitis pigmentosa.

A patient may be born with either the typical retinitis pigmentosa or syphilitic retinochoroiditis.

Myopia and Choroideremia—In high degrees of myopia a curious thinning of the retina is occasionally observed with night blindness. It may be that this form is really part of a general process. In choroideremia the choroid is dissolved except in the macular region and a small circumpapillary ring. As yet, no known cause has been discovered for night blindness with myopia or choroideremia.

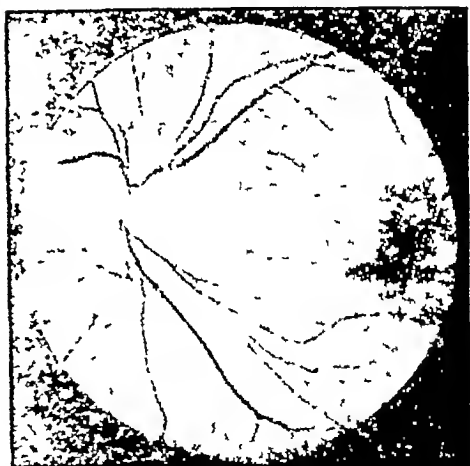


FIG 6 A high degree of near-sightedness with night blindness in a child. The entire fundus is pale.

No increase of any vitamin combination has benefited patients afflicted with real night blindness.

The functional form is unattended by any demonstrable physical change in the fundus. The only symptom on which the diagnosis is made is decreased light sensitivity. It seems as though well-substantiated facts regarding retinal purple and its destruction when exposed to light have been subjected to unscientific distortions and conclusions leading to a misconception of functional values in which many

seem to have been guilty of a gullibility to be deprecated in scientists. An informed reader of the reports will quickly recognize the gross discrepancies between actual facts and unreasoned deductions.

Only a very few of the so-called research reports regarding vitamin A deficiency and night blindness will stand critical analysis. Improvement is often recorded without consideration of the effect of training on the patient's adaptation curve, the time of adaptation, the instrument used (some of them are valueless), and the skill of the examiner.

The extreme to which enthusiasm has misled is best noted in an article in which the authors report the complete cure of night blindness within seven to ten minutes following an intramuscular injection of vitamin A concentrate.*

Conclusions—Night blindness in the vast majority of cases is the direct result of pathologic changes and is not influenced by vitamin treatment.

Transitory night blindness can only be diagnosed by means of properly controlled light adaptation tests.

It seems unwise to stress vitamin A deficiency and night blindness until more exact information is available.

3 Ophthalmoscopy in Chronic Diseases

In disease neither progression nor regression follows a definite prescribed course. Accurate diagnosis calls for comprehensive experience and interpretative skill which are only gained by the frequent observation of many patients. For this reason serial fundus photographs recording the changes from the early recognition of disease to the lethal end more than justify the time and expense incident to their collection. They constitute a readily accessible, clinical repository to which constant reference can be made.

Medical and lay journals, as well as the actual practice of medicine, emphasize the economically alarming situation resulting from chronic diseases, although

often the conditions are only an evidence of senility. It is fitting that physicians devote time to the study of the great amount of available data which has been assembled, amended, and correlated since the beginning of medical history.

Hippocratic aphorisms, Galenic dissertations, middle-age skepticism and dogmatism, Renaissance enthusiasm, nineteenth-century investigations, and twentieth-century alertness have all added to the sum of facts which, when properly understood, are correctly termed medical knowledge.

The eye has been subjected to prolonged critical observations. Sound deductions based on the conditions found have assisted physicians in diagnosis, prognosis, and treatment.

Attention is focused on the fundus alterations caused by some of the common chronic diseases—diabetes, arteriosclerosis, hypertension, nephritis, tuberculosis, syphilis, senile macular degenerations, and the intraocular malignancies of middle age and late life.

The understanding of fundus changes depends upon the appreciation of variations in the vessels and the details of edema, exudate, and hemorrhage. Definite combinations produce patterns that are more or less distinctive of particular diseases. The interpretations of the pictures are of superlative importance, for the mere report of the things seen fails to express their diagnostic or prognostic significance. Ophthalmoscopy is entering upon a new era when correctly evaluated observations will be factors in determining the treatment for the control of many chronic constitutional and circulatory diseases.

Diabetes—It is admitted by all physicians that diabetes is increasing in frequency and that the duration of life of the diabetic has been prolonged. Therefore, the serious problem of preventing or curing the retinitis that develops in the course of the disease is an urgent and yet unsolved one.

In a careful analysis of the fundus photographs of many cases of diabetes, it was noted that the greatest number of

* McDonald's "Some Basic Principles of Dark Adaptation," *Archives of Ophthalmology* 23:841 (1940) is worthy of serious consideration.



FIG 7 Retinitis in diabetes. Exudate in and about the macular area with several round hemorrhages



FIG 8 Malignant hypertension. Red fundus, dilated veins, irregularly contracted arteries, many hemorrhages

patients were between 50 and 80 years of age and that most of them were in their fifties. Women were afflicted almost three times as often as men, and only in 20 per cent were both eyes free from pathologic involvement.

The fundus findings were small, round, dot hemorrhages, minute exudates, hemorrhages and exudates both small or both large, arteriosclerosis, and among others less frequently encountered were hole at the macula and retrobulbar neuritis.

By means of photographs the exact alterations are recorded so that we can forecast the outcome to a certain limited extent. For instance, if exudate is found in and about the macular region of a 60-year-old patient who has never had severe diabetes and in whom the sugar output is under control, the chances are that the fundus lesions will increase in number, and, although some individual spots disappear, others will develop in a rather precise form until central vision is permanently impaired or even destroyed. There are cases in which the first symptom to engage the patient's attention is dimness of vision caused by a vitreous hemorrhage. The blood may absorb until there is practically complete resolution, or the extravasation may lead to the formation of gross retinitis proliferans

sheets and projecting vessel loops. The retinal and choroidal vein variations range from mere dilatation to aneurysmal corkscrew loops. They play an important role in the vascular processes.

By close cooperation we can increase our knowledge of the diabetic process, and by continued stress of sugar control, weight maintenance, and mental composure much will be accomplished.

Arteriosclerosis—Arteriosclerotic fundi are not as easily distinguished as the literature would lead you to believe, because in reality the lesions are often difficult to see. Then, too, the confusion of the signs of hypertension with those of simple sclerosis have left the casual reader, as well as the serious student, in a fog of uncertainty. Actually, sclerosis is found as patchy white plaques in the artery wall or in the reduced caliber of the vessel, either isolated or generalized. When the smaller vessels, arterioles, are involved they are most often seen 2, 3, or even more disk diameters from the disk. The irregular caliber and the increased visibility of the artery wall are dominant expressions. Sclerosis of the choroidal veins frequently localizes in the macular region where a congeries of white-walled veins in various levels shows beneath the thin retina on which the retinal vessels can be traced. Another evidence of

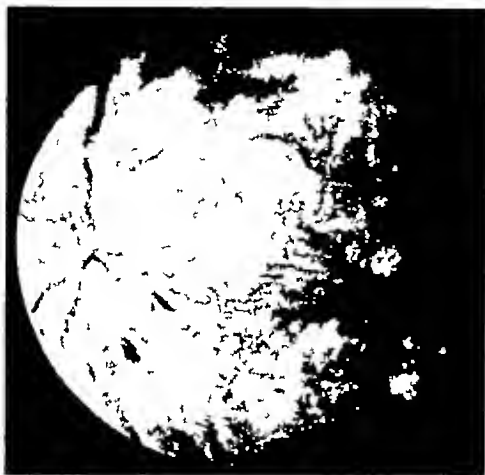


FIG. 9 Terminal stage of chronic nephritis. Loss of disk outline. Exudate radiating from the macula. Vessel changes.

sclerosis is a small circumscribed loss of the retina in the macula, a hole, this is always bilateral and never as large as the one caused by trauma.

Hypertension—In hypertension we reach the ophthalmoscopic climax of chronic disease, for, because of its frequency, increasing occurrence, and serious prognosis, much time has been spent and more is demanded to establish rules of life for each individual. Too much restriction is detrimental to mental relaxation, while too little may prove to be disastrous. Although the care is strictly medical in the vast majority of cases, the ophthalmologist can, however, make pointed suggestions as he observes the fundus from time to time.

Certain established facts must be stated. A patient may have high blood pressure for years without any marked retinal alteration, and then in a comparatively short time the picture changes and the informed physician can foretell the approaching end of life. It is not possible to state definitely the stages of hypertensive fundus disease, for the difference may be imperceptible even from year to year. For practical purposes grades serve as a guide, and this is especially true for the diagnostician who uses the ophthalmoscope in daily practice. The early signs are full veins, cotton-wool

patches, or edema, and, although often only one sign is present, all may be combined at the same time. These become accentuated with higher degrees of edema, more exudates, and many hemorrhages until eventually the composite picture of great retinal swelling and widespread hemorrhages and exudates develops.

If the patient survives long enough, he enters a stage that can always be recognized as prelethal, for in it the retinal edema has almost disappeared and there are few exudates and hemorrhages but marked arteriosclerosis. Deep, round, retinal hemorrhages or dark spots are always indications of rapidly approaching dissolution. The photographs illustrate these points and also give weight to the statement that arteriosclerosis without hypertension is difficult to diagnose except the syphilitic form and that which is found in chronic blood states like pernicious anemia.

Nephritis—The fundi of nephritis have been recognized for many, many years. One of the best ways to diagnose and appreciate their significance is to review a case and show the great diversity of patterns.

A young woman with nephritis passed through the usual stages ending in death. First, there was an immense swelling of the disk with numerous hemorrhages and waxy exudate about the macula, then there was a progressive disappearance of hemorrhages and exudates with subsidence of edema until the terminal phase, where the disk was outlined, the vessels were of almost normal size and distribution, and only a few yellow dots of exudate remained about the macular area.

Blood—Hematologists have recognized visual disturbances, but until a comparatively short time ago the interpretation of the fundus signs had not been discussed.

In pernicious anemia, hemorrhages may be of the superficial striate type and entirely disappear, or they may assume a globular form which is most suggestive of the blood state and, when present, the condition of the blood must be excluded before any other diagnosis is made. Occasionally, the entire arterial tree be-

comes sclerosed in a very typical manner. In myelogenous leukemia the fundus is a lemon-yellow color. In polycythemia vera the fundus is congested, the veins are distended and dark in color, and the arteries have a cyanotic hue.

Tuberculosis—Tuberculosis of the fundus, as of the body, may show itself in one of two forms or a combination of both. In the first there is an exudate, an elevated pale, more or less circumscribed lesion, and a tubercle, which may be minute, military or large, and conglomerate. In the military type there are several areas of infiltration, whereas there is usually only one large tubercle, although a second tubercle may appear later. These tubercles are characterized by very little hemorrhage.

The second distinctive type is ushered in by bleeding, usually arterial, and as the blood oozes into the vitreous it causes a marked loss of vision with complete obscuration of the fundus. If the patient is placed under proper treatment there may be complete disappearance of all blood and restoration of sight, or the hemorrhage may organize to form extensive connective tissue sheets that materially reduce vision.

It has been our practice to exercise the same care in the treatment of tuberculosis of the fundus as the general practitioner uses when attending an active pulmonary tuberculosis—rest in bed, fresh air, and general diet.

Syphilis—The syphilitic changes to which we draw special attention are small pale, pigment-bordered lesions scattered throughout the fundus and producing a picture that has been known for years as "salt and pepper" fundus. The choroidal destruction may, however, be so extensive as to produce massed pigmentation surrounding large areas of choroidal loss. All degrees are encountered from the smallest to the largest patches. The inflammation of the optic nerve, a true neuritis, is characterized by early loss of vision and a swelling of the entire nerve head. This usually responds promptly to treatment and, in our experience, more certainly if it is not too strenuous.

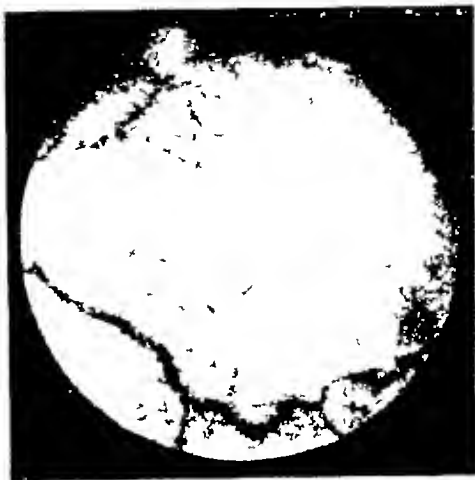


FIG 10 Senile macular degeneration. Yellowish white organized scar. Loss of central vision, unable to see small objects.

Usually, there is complete resolution with restoration of function.

During the third stage of syphilis, a gumma may form in any part of the eye. It is comparatively rare in the fundus but has been seen involving the optic nerve.

For years it has been our habit to subdivide the syphilitic fundus manifestations into those that involve the blood-vessel layers, retina, and choroid and those that cause nerve lesions, for probably the blood-vessel type never leads to locomotor ataxia or the severe brain complications.

Syphilitic optic atrophy may be primary, as in locomotor ataxia where the disk is white and the retinal vessels retain their normal size, or it may be secondary to prolonged intracranial pressure as from gumma or arachnoiditis.

Senile Macular Degeneration—The preceding discussion has referred to the common conditions of age and blood vessels, but the next subdivision of this sketchy review causes anxiety amounting to enervating distress to many an aging student, skilled artisan, or even one who seldom reads. This is a degeneration of the macular region which destroys the central vision but never causes complete blindness. This statement is accurate and deserves constant repetition.

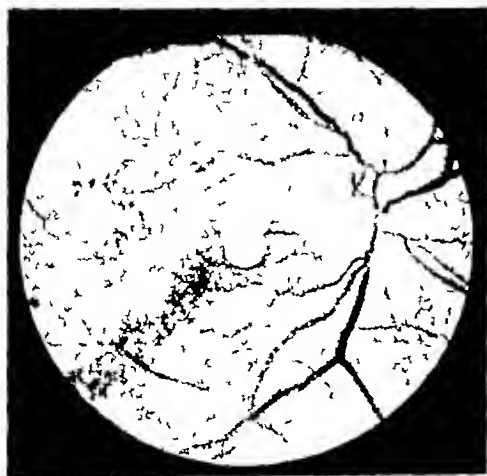


FIG 11 Carcinoma of choroid (metastatic from breast) An oval, yellowish, elevated macular mass with brown flakes of pigment

Several forms of this disease are observed. In the commonest, the patient speaks of an increasing difficulty when reading or doing close work. When seen during the early stages, there is an edema of the macula, a gray swelling about which a few deep, dark red hemorrhages form a partial or complete crown.

After a time the ring of blood expands, the macular area flattens or a definite cyst forms. Following a period, often months, of repeated extravasations, the hemorrhages cease, but a scar of variable size and thickness remains causing a permanent scotoma and loss of central vision. At other times small hemorrhages are the first evidence of danger.

As it is probable that closure of the arterioles and venules supplying the vulnerable macular region are the cause

of the retinal destruction, ophthalmologists appeal to diagnosticians to help find the cause of this common affliction which is so devastating in its effects.

Malignancy—Two pathologic entities, sarcoma and carcinoma are encountered.

Sarcoma of the choroid is usually the primary site which leads to metastasis, most often to the liver. Whenever a patient presents with abdominal symptoms and only one eye, it is obligatory to exclude malignancy. Rarely does a sarcoma of the choroid cause a lung metastasis. I recently heard from a patient from whom I had removed a sarcoma of the choroid twenty years before. She had developed a lung growth.

Intraocular carcinoma is probably always metastatic from breast, lung, or elsewhere.

Visual loss is a symptom common to both malignancies, great when the lesion is central and less and more slowly developing when the lesion is peripheral. Secondary glaucoma, an increased intraocular pressure, may develop from either sarcoma or carcinoma. The removal of the eye is indicated as soon as the diagnosis is confirmed. In this connection it is imperative that serial fundus photographs be taken, for many seemingly hopeless eyes have been saved when the diagnosis of retinal, preretinal, or choroidal hemorrhage has been correctly substituted for that of a malignancy.

These few illustrations serve to emphasize the ophthalmologist's great interest in chronic diseases as well as suggest the role ophthalmoscopy plays in their diagnosis and the help it gives in prognosis.

CHRONIC HEART DISEASES—DIAGNOSIS AND TREATMENT

CLARENCE E DE LA CHAPELLE, M D, New York City

(From Bellevue Hospital and New York University College of Medicine)

CHRONIC heart diseases are due to a variety of etiologic agents ranging from a specific infection, such as syphilis,

to a metabolic disorder, such as myxedema. However, the common forms are those caused by rheumatic fever, arterio-

sclerosis, and hypertension. Bacterial infections, subacute or chronic, and congenital maldevelopment are distinctly less important in the causation of heart disease.

Although relatively little progress has been made in the past few years in clarifying the etiology of the various heart diseases, considerable advances have occurred in their diagnosis and treatment. Discussion will be limited to these two phases of the problem.

Diagnosis

Robb and Steinberg¹ have recently developed a method of visualizing the chambers of the heart and the great vessels which promises to be of value in the differential diagnosis of heart diseases. By the rapid injection of 70 per cent solution of diodrast intravenously, it is possible to visualize radiographically the chambers of the heart, the ventricular walls, the interventricular septum and the valves, and also the aorta and pulmonary vessels. Such information about the heart and intrathoracic blood vessels was previously unobtainable during life.

To date they have made a total of over 650 injections in 306 patients,² of whom one-quarter were normal and the remainder had serious mediastinal, heart, or lung disease. No serious effects have followed the injections despite the presence of advanced disease. The reaction to the injection is slight, and the iodide compound is promptly eliminated by the kidneys. Although the procedure can be performed in the average x-ray laboratory, it is more difficult than most diagnostic tests. The technic is exacting, requiring dexterity and rigid adherence to detail, but through training and practice proficiency can be acquired.

This new diagnostic method has proved its clinical value in Bellevue Hospital and several other institutions and has been of help in the teaching of medicine. By its use, the size, shape, and location of the four cardiac chambers and of the intrathoracic blood vessels can be determined during life, and the site and degree of

abnormality can be ascertained. The most striking results are obtained in diseases of the aorta, aneurysm of the pulmonary artery, pericardial lesions, and congenital anomalies in which recognition is difficult or impossible with conventional methods of study.

The knowledge gained by this method will be useful to the general practitioner as well as to the roentgenologist and the specialist in heart or chest diseases. The information so obtained is of practical value in the diagnosis as well as in the prognosis and treatment of heart disease. As a result of this procedure it is likely that the interpretation of conventional roentgenography and fluoroscopy will become more accurate, enhancing the value of these commonly employed methods of examination and ultimately making visualization of the chambers of the heart and the great vessels necessary only in patients presenting difficult diagnostic problems.

Recently cineroentgenography of the heart and great vessels during opacification has been carried out by Stewart, Robb, and their associates.³ It visualizes rather graphically the anatomy of the heart and thoracic vessels, the changes occurring with the heart beat, and the course and velocity of the blood flow. This procedure should also be of considerable aid in clinical diagnosis. Indeed, it opens up a new field for the study of the physiology of the circulation.

Kymography — Roentgenkymography, which is the method of recording the physiologic movements of the beating heart on a single film, was first conceived about 1911. In 1934 Hirsch^{4,5} introduced multiple-slit kymography to this country and subsequently made many important contributions both to the technic and clinical application. However, it is only in the past few years that this procedure has been employed to any extent in the radiologic examination of the heart and aorta. It has been correlated with simultaneously recorded electrocardiograms and phonocardiograms,⁶ and, more recently, teleradiographic technic⁷ has been applied to it in an attempt to obtain in-

formation concerning heart size, heart volume, and cardiac output

Kymography should be employed as a supplementary procedure rather than as a diagnostic entity. It contributes information concerning the makeup of the cardiac silhouette as a whole or any of its chambers during the various phases of the heart beat. It is of value in the radiologic examination of the pericardium, particularly in constrictive pericarditis and pericardial effusion, valvular deformities, and in the recognition of extraneous shadows such as tumors of the mediastinum. Another important application of kymography is in the recognition of myocardial infarcts.⁸

By means of a device known as a cardiocariograph,⁹ it is now possible to synchronize the kymographic exposures with the cardiac action current phenomenon and thus make it possible to obtain kymographs in which the time scales begun at any predetermined phase of the cardiac cycle.

Electrostethography — Electrostethography¹⁰ has recently enjoyed considerable popularity, principally because of the availability of newer, sensitive microphones and rugged, recording instruments. As a machine, the stethograph is subject to all the limitations of any mechanical device, particularly in the hands of an unskilled operator and interpreter. We have found it of value in teaching physical diagnosis of the heart. A graphic representation of auditory stimuli perceived through the stethoscope greatly enhances the facility with which the student learns to recognize these stimuli and to understand the mechanisms by which they are created. Further than this, the stethograph has limited clinical value for the well-trained clinician.

Occasionally it is used for tuning a murmur or the extra sound in a gallop rhythm, for differentiating a Flint murmur from a mitral diastolic murmur, or for differentiating an opening snap of mitral stenosis from a normal third heart sound or a split second sound. The stethograph will rarely record a murmur not easily heard. In the case of soft, high-

pitched, basal diastolic murmurs, however, it has been our experience that the ear may occasionally detect the murmur when the machine does not, even when aided by a higher frequency resonator. There is evidence that the stethograph may be of value in distinguishing "organic" from "functional" systolic murmurs.

Lag-Screen Belt Electrocardiography — Two years ago an apparatus¹¹ was devised that makes it possible to view the electrocardiogram as a succession of standing waves while it is being recorded. The instrument* is portable and compact, is adaptable to many electrocardiographs, and permits simultaneous photographic recording. The visual record produced is a duplicate of the conventional electrocardiogram.

The apparatus consists of a moving, endless belt coated with material that phosphoresces when exposed to the light beam of an electrocardiograph. Inasmuch as the image is retained eight to thirty seconds by this belt, one may view strips 6 to 20 inches in length. This is ample for comparisons of rhythm and wave forms. For a continuous study of the heart action, the belt may be run steadily for as long as desired or it may be stopped at any point for from ten to fifteen seconds for close inspection of an individual complex.

There are several advantages to this lag-screen or visual electrocardiogram. The immediate visualization is useful in cardiac emergencies and in bedside teaching. It permits inexpensive observations over long periods, as during operations or while evaluating the effects of drugs. It would appear to have value in the routine examinations of large numbers of individuals such as students, employees, and dispensary patients on whom permanent records are necessary only if abnormalities are noted by the visual method.

Precordial Leads — In the ten years that precordial electrocardiography has been applied to the study and diagnosis of myocardial infarction, it has been learned

* Manufactured by Sanborn Company, Cambridge Mass. under the name of *Cardioscope*.

that certain lesions that produce only equivocal changes or none at all in the standard leads show rather marked abnormalities in the chest leads. It is undoubtedly true that most episodes of myocardial infarction produce changes in one or more of the three conventional leads, especially if serial tracings are taken. However, there are a small but appreciable number of infarcts of the myocardium that do not alter the standard electrocardiogram and only reveal their presence by abnormalities in the precordial leads. In some instances the latter will verify otherwise inconclusive changes in the conventional leads.

The contributions of several investigators, particularly Wilson^{12,13,14,15} and Wolferth and Wood,^{16,17} have convincingly demonstrated the value of precordial leads. Clinicopathologic correlations^{18,19,20} in adequate numbers have been made to justify the conclusion that localization of myocardial infarcts with the aid of precordial electrocardiograms is not only possible but quite accurate in most instances. The practical value of localization, however, is not as yet obvious either in prognosis or treatment.

Precordial leads came into widespread use about 1935. Considerable confusion ensued because of the lack of uniformity in the recording technic and the nomenclature of different authorities. This persisted until the recommendations of a joint committee of the American Heart Association and the Cardiac Society of Great Britain and Ireland appeared in 1938. These recommendations²¹ concerned the standardization of a single precordial lead for routine use. In addition, a supplementary report²² by the American committee followed for the standardization of multiple precordial leads. For details refer to the original articles^{21,22} in the *Journal of the American Medical Association* and the *American Heart Journal*.

The recommendations for standardization of precordial electrocardiograms constitute a real advance in making these leads more useful in the recognition of abnormal cardiac electrophysiology.

However, I feel that there are still too many different technics employed, particularly in taking the single precordial lead. This gives rise to confusion and misinterpretation. It is the hope of many who are interested in this work that in the near future even more uniformity than now exists will be adopted.

Ballistocardiography—Starr and his co-workers²³ have recently designed a "swinging bed," known as the ballistocardiograph, for recording the movements imparted to the body by the acceleration of blood during ventricular ejection. All lateral motions of the bed are restricted, and the counterforce associated with the simultaneous ejection of blood into the pulmonary artery and aorta produces a longitudinal thrust of the bed that is recorded optically through a rigid isometric lever and mirror. By the application of the ballistic theory, it is possible to calculate the stroke volume of the heart from the ballistocardiogram so obtained, the figures comparing favorably with the cardiac output estimated by the ethyl iodide method.

Where there is inequality in the development or strength of the right and left ventricle, the rate of acceleration of blood in the pulmonary artery and aorta is unequal, and this circumstance is reflected in the ballistocardiogram and complicates the calculation of cardiac output.

The instrument is useful not only in detecting the muscular inequality just mentioned but also in the analysis of valvular deformities. The estimation of cardiac output by this mechanical device is distinctly less complicated and more rapid than by the various chemical methods.

Spirography—Another supplement to clinical examination and diagnosis has recently been devised by Cournand and his associates,²⁴ who employ a rather simple method of graphic registration of breathing. The apparatus used is a modified recording spirometer* of the closed circuit type ordinarily employed for basal metabolism determinations.

* Manufactured by Warren Collins Boston.

The measurements used for recording respiration include quiet breathing, deep breathing (vital capacity), maximum breathing capacity, and, finally, oxygen deficit. Oxygen deficit is of particular importance in evaluating various circulatory disturbances.

Although primarily of use in the study of pulmonary diseases, it is of value in determining the nature of a patient's dyspnea, whether it is of cardiac origin, or due to chest deformities or respiratory neurosis, or malingering.

In the treatment of heart failure one occasionally encounters the question of an associated chronic pulmonary emphysema and fibrosis with its secondary symptoms. Whether this association is coincidental or whether it is caused by alveolar overdistention is often a subject for debate. In such instances the recognition of obstructive emphysema by means of spirographic tracings is of practical significance.

Therapy

Vitamin B₁ (Thiamin Chloride)—It has recently been suggested that vitamin B₁ deficiency, in addition to being an independent cause of congestive failure as in beriberi or in alcoholism, may condition or exaggerate failure not only in subjects with heart disease of known etiology but also in those of undetermined origin. This deficiency is also quite likely the cause of the heart failure noted in scurvy and pellagra.

Calculations²⁵ made of the diets of wage earners and low-salaried clerical workers show that a goodly portion consume diets so borderline in vitamin B₁ that the presence of one of the many factors increasing the B₁ requirement or that prevent its absorption or utilization is apt to result in clinical vitamin B₁ deficiency.

The prevalence of this deficiency in the United States is difficult to estimate and consequently debatable. The figures of Jolliffe²⁶ indicate that 20 to 30 per cent of hospitalized alcoholic patients have evidence of vitamin B₁ deficiency in the form of polyneuritis, and, of these, about one-third have evidence of circulatory

failure. Alcoholism accounted for over 11,000 first admissions to mental institutions in 1935²⁷, thus, the frequency in this group alone suggests the proportions of the problem.

It is important to appraise the nutritional history not only in suspected cases of beriberi but also in patients with other forms of heart disease in whom congestive failure has occurred. One may obtain a story of an unbalanced diet or excess consumption of vitamin-free calories as from candy or alcohol. The presence of digestive disorders, achlorhydria, colitis, liver disease, and, finally, fever may cause an increased requirement as well as the possibility of failure to absorb or utilize the vitamin.

The onset of symptoms referable to the circulatory dysfunction secondary to vitamin B₁ deficiency is often acute, with palpitation, dyspnea, and precordial pain among the first to be noted. There is progression of the signs and symptoms so that within two weeks or so the individual presents edema, tachycardia, some cardiac enlargement not necessarily limited to the right side of the heart, elevated systolic pressure, a palpable liver, systolic murmurs, and electrocardiographic alterations including depressed S-T segments, negative T-waves, and prolonged Q-T intervals. They tend to improve with bed rest without special dietary measures, but improvement can be hastened by a vitamin-rich diet. With this response there is usually complete reversal of the signs and symptoms.

The treatment of cardiac manifestations of vitamin B₁ deficiency,²⁸ irrespective of whether they are primary in origin or merely an intensification of heart failure of any common type of heart disease, is essentially one of bed rest, diet, and vitamin B₁.

The diet must be adequate in all essentials, avoiding vitamin-free foods such as white bread, candy, and soft drinks, and should be supplemented by the entire vitamin B complex (brewers' yeast and liver concentrate, Vegex) and by concentrates of vitamins A, D, and C. Specific therapy in the form of synthetic vitamin

B₁ (thiamin chloride) should be given parenterally. For those in circulatory collapse, 1,000 mg may be given in divided doses within the first twenty-four hours. Ordinarily, however, the daily administration of 20 to 200 mg in divided doses intramuscularly, depending on the severity, is sufficient. A balanced diet, supplemented by those foods rich in vitamin B complex, is usually sufficient during and following convalescence if the cause of the vitamin deficiency has been found and corrected.

Chemotherapy—Although a recent report²⁹ would seem to confirm previous studies of a downward trend in the mortality from heart disease among young people 5 to 24 years of age (14.9 per 100,000 during 1930–1936 as compared with 19.7 per 100,000 during 1922–1929, a decline of 24.4 per cent) and although 80 per cent of heart disease during this age period is of rheumatic origin, the seriousness of the problem of persons suffering from rheumatic cardiac disease is still fully appreciated.

Most deaths in rheumatic heart disease seem to follow recurrences of rheumatic infection from which patients temporarily recover but, as a rule, with definite diminution in their functional capacity. The commonest cause of these recurrences is acute tonsillitis or pharyngitis usually of streptococcic nature.

Reports^{30,31} in this country seem to show that sulfanilamide has no beneficial effect on rheumatic fever despite its rather close association with hemolytic streptococcic infections. Nor is it effective in preventing rheumatic recurrences when administered during or after the onset of streptococcic throat infections.

However, sulfanilamide does seem to be useful as a prophylactic in the prevention of rheumatic exacerbations. This is indicated by the recent studies of Thomas and France³² and of Coburn and Moore.³³ Thomas and France used a control group of 30 rheumatic children who received no drug for comparison with another group of 30 rheumatic children who received it daily from November to

June. None of those receiving sulfanilamide developed either rheumatic fever or acute hemolytic streptococcic infection, whereas 4 of the controls had an attack of rheumatic fever and 1 other had a hemolytic streptococcic infection. Coburn and Moore administered the drug daily (2 Gm) from November to June to 80 rheumatic children of whom all but 1 escaped hemolytic streptococcic infection and signs of rheumatic activity.

These results are rather striking. They seem to indicate that sulfanilamide may be of practical value as a prophylactic against recurrent attacks of rheumatic fever.

In the past few years innumerable cases of bacterial endocarditis, both acute and subacute, have received one or the other of the new sulfonamide compounds, especially sulfanilamide and sulfapyridine. In most instances reported,^{34,35} the drug lowered the temperature and rendered the blood stream free of bacteria, but these effects were only temporary, i.e., from a few days to several months, and the course of the disease was not altered. A recovery has rarely been reported.^{34,36}

It seems fair to conclude that chemotherapy is of doubtful value in subacute bacterial endocarditis (*Streptococcus viridans*) because of the nature of the site of infection as typified by the large proliferating vegetations beneath whose surface clusters of bacteria are well protected from the action of the circulating drug. However, there is some hope that these drugs may be effective in the acute endocardial lesions, especially those of gonococcic³⁶ and pneumococcic origin. Since the disease is almost universally fatal, any form of chemotherapy that offers the slightest chance of recovery and whose possible benefits may outweigh the risks should be given a liberal trial.

Heparin—The recent studies of Best and his co-workers^{37,38} on heparin are of distinct significance for those interested in the treatment of heart diseases. Of considerable interest is the demonstration that heparin prevents the thrombosis that usually occurs in the coronary arteries of dogs after sodium ricinoleate

has been injected into these vessels. In other words, it prevents thrombus formation in the coronary arteries of these animals in the same manner as it has been shown to do in the peripheral vessels of man. This suggests, of course, the possibility of its clinical use in the initial stages of coronary thrombosis, either in an attempt to prevent thrombus formation in a coronary artery or, if already present, prevent its extension or at least arrest the mural thrombosis that so often occurs in the ventricle over the infarct. The latter thrombus is a source for embolic complications. Experimental and clinical experience³⁹ has shown that heparin will not dissolve a thrombus either *in vivo* or *in vitro* but that it can readily arrest or prevent it.

It has been mentioned on several occasions that the main difficulty in the clinical investigation of heparin as a therapeutic or prophylactic agent in coronary thrombosis is the absence or lack of recognition of premonitory signs and symptoms of this lesion. A clearer understanding of the precipitating factors of coronary thrombosis must be had before the rationale of heparin administration in this condition will be acceptable. Unfortunately it is still a relatively expensive product (\$50-\$100 per gram), costing \$4.00 to \$7.00 per day in Canada,⁴⁰ to keep the clotting time of a patient's blood around twenty minutes. Its cost is, therefore, a distinct drawback to widespread experimental or clinical studies.

The use of heparin in the treatment of subacute bacterial endocarditis has been reported recently both in combination with sulfapyridine and also alone.

In the first method using both drugs,⁴¹ sulfapyridine was employed for its bacteriostatic and perhaps bactericidal action on the circulating bacteria or those on the surface of the vegetations, and heparin was used for its anticoagulating action and to prevent further thrombotic deposition on the vegetations. Only 3 of the 7 patients with *Str. viridans* endocarditis submitted to this treatment were able to take the heparin for more than a week, but all 3 were said to show striking

improvement and were free from evidences of the disease for nineteen, eighteen, and four weeks, respectively, after stopping treatment.

In using heparin alone, Friedman and collaborators⁴² felt that it might prevent new fibrin and platelet formation and thus allow the valvular processes of repair and sterilization to gain the ascendancy and terminate the infection. However, the patient died of cerebral hemorrhage before a long enough time had elapsed to evaluate the worth of this treatment.

Both reports, of preliminary nature and appearing simultaneously, although interesting, are too recent and too inconclusive to permit any deductions at this date. However, in view of the hopeless nature of the disease further trial is warranted.

Ouabain and Digitalis—A combination of ouabain intravenously and digitalis orally as a method of rapid digitalization has recently been presented by Batterman, Rose, and DeGraff.⁴³ They wished particularly to avoid the disadvantages of the accepted methods of the use of both drugs by supplementing and maintaining the early action of ouabain by the simultaneous administration of a single dose of digitalis. It was to be expected that at the time when the therapeutic effect of the ouabain passed its maximum and started to diminish the slowly increasing action of digitalis would be manifest. In this way an interval between complete digitalization and the establishment of a maintenance level would not occur.

Rapid and safe digitalization can be obtained by the simultaneous administration of 0.5 mg (5 cat units) of ouabain intravenously and 6 to 8 cat units of digitalis leaf orally, the latter depending upon the estimated edema-free weight of the patient.

Digitalization was performed sixty times in 59 patients regardless of the degree of congestive heart failure, type of heart disease, rhythm, or age. Improvement in the majority of patients occurred within one hour. This improvement, once established, was progressive, the maxi-

num effect occurring at twenty-four hours

The advantages of the method include relative ease of administration, ease of establishment of the maintenance dose of digitalis leaf, its applicability to patients with regular sinus rhythm as well as to those with auricular fibrillation, and the rapidity of producing safe and complete digitalization

From the foregoing it is apparent that the method should be of value in patients requiring rapid digitalization as an emergency in acute or severe congestive heart failure and in those in need of prompt surgical or obstetric intervention

The method should be used with caution in patients with myocardial infarction and its use avoided in patients who have received digitalis ten to fourteen days prior to observation

Surgical Therapy of Chronic Heart Diseases

There are some diseases of the heart and great vessels which respond well to surgical measures. Their number seems to be increasing steadily. The most recent addition to this group is that of patent ductus arteriosus, one of the commonest congenital anomalies of the heart. The surgical procedure is that of ligation, the first successful one having been performed by Gross and Hubbard in August, 1938,⁴⁴ although it was first suggested in 1907. To date some 30 or more ligations have been performed throughout the country, 13 by Dolley, Jones, and Bullock^{45,46} (Los Angeles), 10 by Gross⁴⁷ (Boston), 4 by Touroff⁴⁸ (New York City), and the remainder by other surgeons. The operative mortality has been very low except in those complicated by subacute bacterial endarteritis, and the results have been uniformly good with complete relief of symptoms. Of special interest is a patient whose patent ductus was ligated in the presence of subacute bacterial endarteritis and who has now been well some three months with negative blood cultures that had been positive for the *Str. viridans* preoperatively.⁴⁹

The prognosis of patients with this anomaly is poor, especially from the point of view of the internist who sees them in adolescence and young adult life, for the majority (86 per cent) die at this period as a result of the abnormality. Over half of these die of bacterial endocarditis and the remainder of congestive heart failure. It is of importance to note that only by eliminating children below three years of age from any statistical analysis of this condition can the incidence of bacterial infection be properly computed.⁴⁵

The indications for ligation are not as yet clearly defined, and the ultimate prognosis remains unknown. Therefore, the operation is still in the experimental stage and should not be recommended routinely for all individuals with patent ductus arteriosus. If it will prevent the development of bacterial endarteritis, it would seem to be most advantageous if performed in childhood before the second decade, since the incidence of this complication increases considerably around this period.⁴⁵ Then, too, the operative procedure is easiest in the young children.

Other indications would seem to include the presence of a diminished functional capacity, the presence of marked enlargement of the heart, and, finally, impaired growth and development.^{45,49}

Undoubtedly the future course of those patients successfully operated on in the past year or so will some day give the answer as to whether or not ligation can improve the prognosis for patients with patent ductus arteriosus and especially whether it will prevent the development of subacute bacterial endarteritis. Less than two years have elapsed since the first case⁴⁴ was successfully ligated.

Surgical Therapy of Coronary Insufficiency.—New surgical procedures continue to be developed in the treatment of individuals with coronary disease, especially for those with the anginal syndrome. Other methods^{50,51} have more or less been discontinued or the frequency of their usage considerably decreased. Among the latter is total thyroidectomy, which was

first proposed some five or six years ago for the treatment of congestive heart failure and angina pectoris. During the intervening period some 800 patients were treated by total ablation of the normal thyroid. Blumgart,⁶¹ who with Levine originally evolved this rather radical method, is the only experienced authority who still considers it a valuable procedure. However, he recommends it less frequently than previously but feels that it is of value in the occasional patient whose congestive heart failure or anginal syndrome remains stationary or is slowly becoming worse despite the benefit of thorough medical therapy.

Cardio-omentopexy—In January, 1936, O'Shaughnessy⁶² first performed on man the operation known as cardio-omentopexy after several years of research to evolve a method for the revascularization of the ischemic heart. In a series of publications he reported a detailed investigation of the methods to increase the blood supply to the heart. He showed that a pedicled omental graft in a dog was compatible with a high degree of physical activity and that vascular connections demonstrable by injection methods developed rapidly between it and the myocardium, irrespective of whether it was applied to normal myocardium or an area of recent or old ischemia. To date O'Shaughnessy has performed fifty grafts in man, but no analysis of this group is available as yet.⁶⁴ In 1938 he⁶⁵ reported on 20 patients with evidence of cardiac ischemia, 15 of whom suffered from severe angina pectoris but in all of whom medical therapy had failed. There were 5 deaths, but only 1 was the direct result of operation. Of the 10 patients with angina who survived, 8 were completely free of the anginal pain, and, of these, 7 had returned to work. Of the 8 "cures," 7 occurred after cardio-omentopexy and 1 after the insertion of an irritant (aleuronat) in the pericardial cavity.

The last procedure, known as cardio-pericardiopexy and employing talcum powder instead of powdered beef bone or aleuronat, has been performed by Thompson and Raisbeck⁶⁶ in some 11 patients

with advanced coronary disease, some with old coronary occlusion and healed myocardial infarcts. Four deaths have occurred in the group, only 1 directly related to operation, the other 3 being due to recurrent myocardial infarcts two, three, and six weeks, respectively, after operation. Two patients operated on some eighteen and sixteen months ago are symptom-free and active in business.⁶⁷

The purpose of this method is to produce adhesions between the two pericardial layers so that new blood vessels may grow into the epicardium and myocardium and thus act as a collateral coronary circulation.

Considerable skepticism exists as to the significance of these new blood channels because of unfavorable results in injection studies of adherent pericardia and other grafts. The most recent experimental studies reported are those of Burchell,⁶⁸ who feels that as far as coronary occlusion in dogs is concerned the role played by vascular channels in pericardial adhesions in supplying blood to the myocardium is minimal or nonexistent.

Irrespective of the rather contradictory experimental studies in dogs, many more patients must be submitted to these procedures before any definite conclusions can be made. To date the results are moderately encouraging. Whether one of these developments in the surgical therapy of coronary disease will become a therapeutic method of considerable value still remains to be decided.

Electrothermic Coagulation of Aortic Aneurysms—Although the wiring of aneurysms was first attempted some seventy-five years ago and although the principle of this treatment, to induce clotting, is basically sound, the results have been variable and, in general, not satisfactory.

Recently, Blakemore and King,⁶⁹ on the basis of experimental and clinical studies, found that fast-moving blood will not clot on wire. For the past few years the authors have employed an ingenuous method of wiring aneurysms, in which the blood velocity and not the size of an

aneurysm indicates the amount of wire necessary to slow blood flow to a velocity at which complete clotting takes place. They introduce into the aneurysm through a special needle adequate amounts of an insulated silver alloy wire to impede blood flow. This is later heated to an average temperature of 80 C for one to four ten-second periods. Heating the wire results in the deposit of a protein coagulum that furnishes a clot-stimulating surface to the circulating blood. The temperature changes in the wire are followed by an instrument known as a ratiometer from which the temperature to which the wire is being heated can be read directly and instantly. Since the rate of cooling is the factor determining the current necessary to heat the wire distributed within the aneurysm, a good index of the velocity of blood flow through the lesion is obtained. The heated wire not only reinforces the blood clot but may cause heat inflammation within the sac wall, which in turn promotes adherence and organization of the clot. Wiring is repeated at from seven- to fourteen-day intervals for the more active aneurysms.

The results⁶⁰ in 28 patients have been remarkably good. Several of the patients who were wired five years ago are alive and quite active. Although 11 have died in the intervening years, only 2 were considered to be of operative nature. Relief of symptoms has been complete in the majority of the cases. Either reduction in size or absence of growth of the aneurysm has frequently been demonstrated. It has also eliminated the complications of compression and erosion and has even averted rupture.

This method of wiring and clotting sacular and fusiform aneurysms is safe and efficient. It seems to me justifiable to recommend it for the treatment of those individuals who present either signs or symptoms of an expanding aneurysm, for there is apparently nothing in the medical armamentarium to prevent this progression.

In conclusion, I wish to state that this has been a hurried and rather brief discussion of the more recent refinements in

the diagnosis and also in the treatment of chronic heart diseases.

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TOTAL CASE DATA - 307 CASES (1930-40)
 CASES OF SYMPTOMS FOLLOWING CHOLELITHIOMY FOLLOW-UP DATA

ORIGINAL OPERATIVE FINDINGS	NO. CASES	PERIOD OF FOLLOW-UP STUDY	NO. CASES	SYMPTOM FREE	RECURRENT SYMPTOMS	COMMON DUCT STAGES								MISCELLANEOUS		TOTAL CASES	
						NON-DYSKINETIC (Dyskinesia)		DYSPHASIC (Cholangitis)		CHOLANGITIS WITH PANCREATITIS		CHOLANGITIS WITH CHOLELITHIASIS		RELATED CONDITIONS		TOTAL	TOTAL
						STAGE	STAGE	STAGE	STAGE	STAGE	STAGE	STAGE	STAGE				
CASES 1, 2, 3																	
NON-DYSKINETIC (Dyskinesia)	13	Under 2 yrs.	10	2	8		8								8	0	
		Over 2 yrs.	3	0	3		3							3	0		
DYSKINETIC (Cholangitis)	44	Under 2 yrs.	15	6	9		5	1	2		1				7	2	
		Over 2 yrs.	29	1	28		15		2				1 perforated duodenal ulcer	24	4		
CASES 4, 5, 6																	
NON-DYSKINETIC (Dyskinesia and Metabolism)	34	Under 2 yrs.	26	18	8		8								8	0	
		Over 2 yrs.	8	3	5		5							5	0		
DYSKINETIC (Cholangitis)	170	Under 2 yrs.	108	55	53	2	43		3		3			2 stricture of common duct	52	2	
		Over 2 yrs.	82	12	65	5	45	4	6	3	1			50	15		
4th FACTOR AND COMMON DUCT STAGE																	
NON-DYSKINETIC (Dyskinesia)	6	Under 2 yrs.	0	0	0												
		Over 2 yrs.	6	3	3		2		1					3	0		
DYSKINETIC (Cholangitis with Cholelithiasis)	20	Under 2 yrs.	10	3	7		2	1	1	1	1		2 stricture with cholangitis	2	5		
		Over 2 yrs.	10	6	4		2	2						1	3		
TOTAL	307		307	114	193	7	144	8	15	4	4			142	31		

FIG 1

cholecystitis Follow-up studies indicated recurrent symptoms in approximately 50 per cent of the cases, although evidence of recurrent infection of the common duct was infrequent Nineteen patients showed recurrent or retained common duct stones Seventeen of the 101 patients having either cholangitis or common duct stones were subjected to further operative procedures

Evidence of common duct disease was found at the time of the original operation in 26 cases Of the 6 patients in the noninfectious group, 3 had recurrent symptoms All of these were treated medically Of the 11 patients in the infectious group who had recurrent symptoms, 8 required further surgical intervention

In the total group of 307 patients, there were recurrent symptoms in 193 or 63 per cent Medical management was indicated for the relief of symptoms in 84 per cent of the group, surgery was required in 16 per cent

Four case histories have been chosen from this group of 307 patients They represent the main factors of infectious cholecystitis in the group The influence of gallbladder and, postoperatively, of

common duct dyskinesia in the postoperative recurrence of symptoms in the group of 307 cases is also shown to be a major factor in the postoperative care of these 4 patients The relative importance of postoperative dyskinesia of the common duct is not adequately shown in the cases selected A review of the incidence of common duct dyskinesia as a cause of postoperative symptomatology is shown to be far greater in the entire 307 cases than that found in the 4 cases selected The popular belief that infection is the inciting factor in gallbladder disease has led us to select these 4 cases in which the course of the infection can be traced throughout the period of observation of the case The influence upon the infection of the proper treatment of the dyskinesia element is obvious in Case 2 By such concrete evidence of the influence of dyskinesia upon infectious cholangitis, popular interest may be aroused in the cause of symptoms occurring in patients in whom no infection can be demonstrated An analysis of those patients seen in the clinic in the primary stage of gallbladder disturbance has shown, insofar as symptomatology and pathology can be determined, 90 per cent to have

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CAUSES AND RELIEF OF SYMPTOMS FOLLOWING CHOLECYSTECTOMY

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A STUDY of the cause and relief of symptoms following cholecystectomy has been carried out by the gallbladder clinic of the Post-Graduate Hospital during the past ten years. During this period of time a total of 485 operative cases has been observed, 307 patients of which have had a follow-up study (Fig 1)

The original operative diagnosis has been used as a means of classification in the follow-up study group of 307 cases. The follow-up period of observation of patients has been divided into two parts: those who have been studied for less than two years and those who have been studied for more than two years. A division of this kind demonstrates that patients followed over long periods show a greater tendency for recurrence of symptoms. This suggests the fact that the majority of patients will show a recurrence of symptoms if followed long enough.

The noncalculous group includes the noninfectious and the infectious types of gallbladder disease. The former represents those patients who present the symptom syndrome associated with disturbance in the common duct sphincter mechanism known as dyskinesia. This group of operative dyskinesia cases is

small because cholecystectomy has been practically discontinued in the treatment of this disturbance. The follow-up in the 13 cases shows a recurrence of symptoms in 11 patients, 8 out of 10 of whom experienced this recurrence in less than two years. This clearly indicates the reason for discontinuing surgical treatment in this group.

The infectious group includes those patients in whom active infectious cholecystitis was found, with no stones. The follow-up in this group shows the majority of patients to be in need of medical treatment, although there were 6 cases reoperated upon for recurrence of symptoms of cholangitis or common duct stone.

The calculous cases have also been divided into the noninfectious and infectious types of disease. In the noninfectious group are included both dyskinesia and metabolic disturbances. In those cases of dyskinesia followed for more than two years, the proportion of recurrent symptoms was about the same as in the noncalculous group. All of this group were placed under medical care.

In the infectious group with stones are included both acute and chronic

The belief that infection and its influence in destruction of the gallbladder function is responsible for the symptom syndrome of gallbladder disease is considerably shaken by the observation of such instances as the above in which no dyskinesia of the gallbladder mechanism can be demonstrated.

The basis for the claim of no dyskinesia existing in this instance is found in (1) the relatively quiescent preoperative period in which the gallbladder function was completely destroyed, (2) the preoperative duodenal drainage examination with normal response of moderately dark bile to duodenal stimulation with magnesium sulfate and olive oil and the few crystals found upon microscopic examination, (3) the operative findings of moderately dilated common duct such as takes place when the gallbladder is removed or destroyed by disease, (4) the finding of no bile in the fibrotic gallbladder, and (5) the positive culture of *B. typhosus* in the gallbladder wall.

The follow-up course has shown no evidence of dyskinesia in that (1) the duodenal drainage bile specimens have been uniform, (2) there has been no pain and few associated symptoms of dyspepsia, and (3) only an occasional crystal in the bile specimens. No treatment of a specific nature has been needed to supplement the result of surgery in effecting a complete cure so far as can be determined in this patient.

Infectious cholecystitis of this type, in which it seems fair to assume that little or no dyskinesia of the gallbladder emptying mechanism has existed, is uniformly cured by cholecystectomy when the operation is performed before an extension to the common duct has taken place.

The schematic drawing below the graph in Fig. 2 is an attempt to show the pathologic course, pre- and postoperatively, of this case of infectious cholecystitis in which there is no dyskinesia or pathologic dilatation of the common duct.

Case 2—A woman, aged 30, was admitted to the clinic on November 1, 1939, with a chief complaint of typhoid carrier. The past history of typhoid fever occurring in July, 1938, was accompanied by a blood-stream infection and acute typhoid cholecystitis. Operation was performed at that time and an acute cholecystitis with cholelithiasis was discovered. The past history of this patient is in marked contrast to that in Case 1 in that there was a previous gastric history simulating ulcer syndrome of four years standing for which she had had medical treatment without relief. The subsequent course of the case revealed positive gallbladder disease instead of ulcer to be the cause of the symptoms

No organisms were found at operation other than the typhoid bacillus. It seems fair to assume, on the basis of the establishment of dyskinesia postoperatively in this patient, that the primary cause of gallbladder disease was dyskinesia with bile stasis and subsequent stone formation and intercurrent infection with the typhoid organism during the course of the blood-stream infection.

Following the removal of the gallbladder in this patient, the symptoms of gastric distress became more pronounced. In addition, the stool examination continued to show *B. typhosus*. Gastrointestinal x-ray examination revealed no ulcerative lesions. The two foci of retained typhoid infection remaining were the appendix and common duct involvement.

Upon her admission to the gallbladder clinic and its routine examination, the presence of typhoid bacilli in the duodenal bile specimens was established. In addition, the examination revealed common duct dyskinesia and bile stasis, with corresponding symptom syndrome.

Treatment, instituted for the relief of common duct dyskinesia and bile stasis, consisted of antispasmodics, sedatives, and dilute hydrochloric acid. A review of the patient's postoperative course reveals (1) a return to normal of the response to magnesium sulfate and olive oil stimulation of the duodenum, and (2) disappearance of crystalline sediment. The symptoms of gastric nature cleared up. Two cultures revealed *B. typhosus* during the early period of therapy, and the following four examinations have been negative after the disappearance of all evidence of dyskinesia.

On the grounds of the similarity of findings in other patients who have been followed throughout the course of their disease, we assume, in this instance, the presence of dyskinesia as a primary factor before operation, and, as an established finding after operation, that the infection by *B. typhosus* was a superimposed element in the case. Cholecystectomy alone is not sufficient either to relieve the infection or to effect relief of the dyskinesia, the effect of which has been passed on to the common duct after cholecystectomy. In this instance the infectious invasion of the common duct had not become so well established in the sacculi of the common and hepatic duct radicals that medical treatment, flushing of the duct, could not accomplish a cure. Other instances have been observed in which an extension of the typhoid infection from the destroyed gallbladder to the hepatic ducts with the development of stones in the common duct could not be relieved by medical treatment until after the stones were removed.

Case 3—A man, aged 40, was admitted

AGE: 43		LIVERPOOL, KATE		GROUP: I TYPHOID CARRIER		X-RAY: O V STONES	
PRE-OPERATIVE DATA		OPERATIVE 3 15-38		POST-OPERATIVE DATA		F-M 37 6 1 6-9 6-11 9-17 11-21 2-27 4-6 6-13 10-17 12-19 14-20 16-22 18-27	
DUODENAL DRAINAGE SPECIMEN	4/ 3/ 2/ 1/	NO BILE OBTAINED		DUODENAL DRAINAGE SPECIMEN	4/ 3/ 2/ 1/		
SYMPTOMS PAIN	2/ 1/ 0			SYMPTOMS PAIN	2/ 1/ 0		
ASSOCIATED SYMPTOMS	2/ 1/ 0			ASSOCIATED SYMPTOMS	2/ 1/ 0		
MICROSCOPIC DUODENAL SPECIMEN	2/ 1/ 0			MICROSCOPIC DUODENAL SPECIMEN	2/ 1/ 0		
FASTING GASTRIC FREE HCL	10 5 0			FASTING GASTRIC FREE HCL	10 5 0		
BLOOD CHOLESTEROL	230 220 215 200 110 100			BLOOD CHOLESTEROL	230 220 215 200 110 100		
STERCIL INDEX	10 5			STERCIL INDEX	10 5		
CULTURES DUODENAL SPECIMEN	2/ 1/ 0	OPERATIVE CULTURE OF 6 B STONES & CISTIC BODY STONE BILETTE O.B. WILL - POS FOR B TYPHOID		CULTURES DUODENAL SPECIMEN	2/ 1/ 0		
TREATMENT		CHOLECYSTECTOMY		TREATMENT			

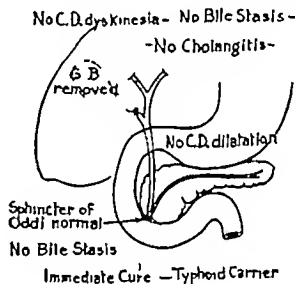
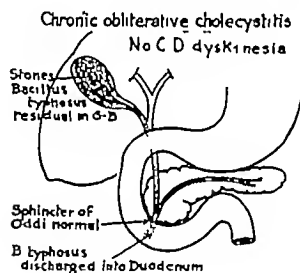


FIG 2

dyskinesia and 10 per cent to have infectious lesions

Case Reports

Case 1 (Fig 2)—A woman, aged 43, was admitted to the clinic on February 16, 1938, with a chief complaint of typhoid carrier. The past history of typhoid fever eighteen years previously was followed by no positive signs of gallbladder disease. During routine health examination in November, 1937, her stool examination revealed typhoid organisms. There was a history of nausea with epigastric distress and distention.

Physical examination revealed a poorly nourished, anemic individual with no external signs of organic disease. Investigation of the gallbladder tract by the routine of the clinic revealed a non-functioning gallbladder with positive cultures of *Bacillus typhosus* in the duodenal bile specimens.

Operative treatment of cholecystectomy was recommended because of the typhoid complication which was thought to be residual in the gallbladder. Operation took place on March 25, 1938. An obstructed gallbladder was found packed with stones. The common duct was moderately dilated.

Pathologic examination of the gallbladder wall revealed a marked destructive cholecystitis of a chronic inflammatory type. Cultures of the gallbladder wall were positive for *B typhosus* organisms.

The follow-up routine examination in this patient began two months after operation, with a duodenal drainage examination which included a culture of the bile obtained. The first examination and ten subsequent cultural examinations of the duodenal bile and stool specimens during the following year have been negative for *B typhosus* organisms.

drawal of the tube was in order at this time as the bile drainage was free of pus and detritus. The bile drainage from the cholecystostomy wound ceased with the withdrawal of the tube, and the sinus healed promptly.

Admission to the gallbladder clinic after discharge from the hospital was advised to determine the status of the gallbladder function, the need of medical or surgical care, and the prognosis of the future course of the case.

The routine examination has revealed (1) gallbladder dyskinesia with bile stasis, evidenced in the duodenal drainage response, and (2) chronic residual cholecystitis as evidenced by the positive cultures of colon bacillus in the concentrated duodenal bile specimens and in the faint visualization of the gallbladder by x-ray examination (Fig 5). The alpha streptococcus, found in addition to the colon bacillus in the operative cultures, has apparently disappeared from the gallbladder, as it is not found in gallbladder bile specimens obtained in the duodenum. The increase in concentration of bile in the gallbladder as its function has been restored, may have been the factor responsible for killing off the streptococci.

Experiments have repeatedly shown that streptococci do not become adapted to life in concentrated bile solutions, while the colon bacillus has been shown to be adaptable to life in concentrated bile. As is shown in this and other cases, the colon bacillus may reside in the gallbladder as a dormant growth to become active in the cause of acute inflammation under conditions of complete or partial obstruction. Therefore, the prognosis in this case rests upon the ability of medical means to keep the flow of bile through the duct system active. The existing dyskinesia, as shown by the irregular response to duodenal drainage, the active symptom complexes of pain and associated gastric symptoms, and the presence of crystalline sediment are an indication for the need of continuing medical treatment so long as there exists a positive duodenal culture. Surgical removal of the gallbladder will be indicated, even though the risk is considerable due to myocardial changes, in the event that the x-ray reveals further damage to the gallbladder wall or if symptoms of subacute cholecystitis arise, viz., fever, vomiting, low-grade jaundice. Eventually this patient will probably develop acute cholecystitis again even though the original focus in the appendix has been removed. Specific means, such as chemotherapy, have failed to clear up a residual infestation of the gallbladder by the colon or typhoid organism in other cases.

Case 4—A man, aged 59, was admitted to



Fig 5

the hospital on August 26, 1929, with a chief complaint of abdominal pain and a negative past history. There had been a sudden onset of symptoms and signs of acute cholecystitis with abscess in the right upper abdomen. His temperature was 104 F, pulse, 120, white blood count 22,150, with 90 per cent polymorphonuclears.

Operation revealed an acutely distended, inflamed gallbladder with local peritonitis and acute pancreatitis. Cholecystostomy was performed to drain the acutely inflamed gallbladder and to relieve the back pressure of the bile upon the pancreas. Convalescence was uneventful. No treatment or special examinations were carried out during the interval before his second admission to the hospital.

The second admission was on February 20, 1936, and his chief complaint was abdominal pain. At that time the history and physical findings revealed that acute cholecystitis had recurred. Operation revealed perforation of acutely inflamed gallbladder with abscess formation. The patient was extremely ill on



FIG 3

to the hospital on July 30, 1938. The past history revealed no evidence of active gallbladder disease until after the removal of an acute appendix two months prior to the acute attack of cholecystitis and pancreatitis for which the patient was admitted.

The mode of infection in Case 1 was not determined by the history, in Case 2 the history suggested the blood stream as the route of infection.

Hypotonic dyskinesia and bile stasis such as this patient shows postoperatively is not associated with an active preoperative symptom syndrome until after stones occur. The assumption in this case of infection entering the gallbladder and pancreas through the well-known channel of the lymphatic distribution associated with the appendix, gallbladder, and pancreas seems to be justified by the previous appendicitis, the operative findings, and the postoperative results to date.

The present history upon admission of acute illness of seven days' duration was supported by the physical findings of an extremely ill individual with a temperature of 104 F, white blood count 18,600, with 86 per cent polymorphonuclears. The usual appearance of cyanosis of pancreatitis was so pronounced that a suspicion of pneumonia was ruled out by x-ray. The abdomen was distended and rigid, and no masses could be detected.

Abdominal exploration under local anesthesia revealed an acute cholecystitis with rupture of the fundus of the gallbladder through an area of necrosis, fat necrosis in the omentum, and an acute pancreatitis. Cholecystectomy was performed for drainage of the acute inflammation of the gallbladder and to relieve the possible back pressure of bile upon the pancreatic ducts.

The postoperative course during the first week was stormy and was accompanied by evidence of liver damage and threatened liver failure.



FIG 4

The first cholecystocholangiogram (Fig 3) was taken seventeen days after operation. No emptying of the huppuran was seen to be taking place through the papilla of Vater after the use of amyl nitrite to relax the sphincter of Oddi. The inference of acute pancreatitis being the obstructing factor was borne out by the second cholecystocholangiogram (Fig 4), made seven days later, in which there was revealed moderate dyskinesia and prompt emptying following the use of amyl nitrite inhalation. No discomfort followed the clamping off of the tube as soon as the patient was placed on belladonna. With

medical care by both specific and non-specific means, and finally the necessity for cholecystectomy to prevent recurring acute cholecystitis in an obstructed gall-bladder as well as the cholangitis resulting from such a condition

Conclusions

Total series observed by clinic having cholecystectomy (1930-1940)	485
Total series observed by clinic having postoperative examination (1930-1940)	307

Total series having recurrent symptoms (63 per cent of total)	193
Total series having no recurrent symptoms (37 per cent of total)	114
Total series having recurrent symptoms undergoing medical care (84 per cent of total)	162
Total series having recurrent symptoms undergoing surgical care (16 per cent of total)	31

CHRONIC NONTUBERCULOUS RENAL INFECTIONS: THEIR SIGNIFICANCE AND TREATMENT

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IT is becoming increasingly obvious that in the study and treatment of certain forms of chronic renal disease there is need for close cooperation between the internist and urologist. This conclusion is supported by convincing experimental and clinical evidence. Janeway,¹³ Hartwick,¹⁰ Collins,⁵ and Goldblatt and his co-workers⁷ have shown that an elevation in blood pressure follows the partial constriction of the renal artery. Bell and Pederson¹ and Braun-Menéndez¹⁸ observed an increase in blood pressure following the partial constriction of the renal vein. Hartwick¹⁰ and Harrison, Mason, Resnik, and Ramey⁹ noted that the ligation of one or both ureters caused an increase in blood pressure. Goldblatt⁸ demonstrated that the removal of an ischemic kidney, produced by the partial constriction of the renal artery and causing hypertension, was followed by a return of the blood pressure to a normal level. The clinical confirmation of these experimental observations was rapid and convincing. Leadbetter and Burkland,¹⁴

Freeman and Hartley,⁶ Boyd and Lewis,² Walters and Baker,²² Butler,⁴ and, in fact, many others have reported excellent clinical results following the discovery and correction of pathologic lesions of the urinary tract that were producing renal ischemia and hypertension. From the above observations it is at once evident that in those cases in which the routine medical examination gives no explanation for the presence of hypertension the patient should have a complete urologic study.

Inasmuch as the lesions due to chronic nontuberculous renal infections may cause renal insufficiency as well as hypertension, early diagnosis and proper treatment are exceedingly important. It is the internist who practically always sees the patient during the acute and subacute stages of the disease. Whether or not the infection becomes chronic depends, in no small measure, upon the way the patient is treated during the acute or subacute stage of his infection. The day of shotgun therapy in the treatment of renal infec-

this occasion, and cholecystectomy did not seem feasible under the circumstances. Again cholecystostomy was resorted to in addition to drainage of the adjacent abdominal abscess. Recovery was uneventful with prompt closure of the biliary fistula.

On June 3, 1936, he was admitted to the gallbladder clinic. The diagnosis was interval cholecystitis with gallbladder obliteration.

Concentrated duodenal bile specimens with little crystalline sediment and a culture of *Bacillus coli communis* were obtained. Abdominal pain was moderate, and associated gastric symptoms were pronounced. There was a normal gastric HCl and little evidence of liver damage. Gallbladder x-ray revealed no visualization after the dye, and the diagnosis of infectious cholecystitis with the colon bacillus was substantiated. Under ordinary circumstances the patient would have been referred back to the hospital for cholecystectomy. The presence of an active angina with electrocardiographic evidence of coronary artery disease so increased the operative risk that medical treatment of the infectious cholecystitis was undertaken.

The diagnosis of common duct dyskinesia was established by the examination in which irregular response to duodenal stimulation with magnesium sulfate and olive oil was shown, together with a symptom syndrome of dyskinesia, crystalline bile sediment, and no signs of actual obstruction of the common duct with liver damage.

A medical routine of antispasmodics and frequent feedings was begun in order to flush the common duct and avoid bile stasis. Autogenous vaccine was begun as specific treatment against the colon bacillus infection. *B. coli* continued to be found in the duodenal specimens and chemotherapy in the form of prontosil was tried without success. The symptoms of pain and associated gastric distress continued under the specific treatment. During the latter part of the medical period, the symptoms were suggestive of renewed activity of the infection in the gallbladder, although no fever or jaundice appeared. The liver function improved under the routine of medical therapy.

After two and one-half years of treatment, the heart lesion remained about the same, with active coronary disease still present. In spite of the obvious risk involved in the use of surgery, an operation seemed to be advisable to remove the source of recurrent abdominal infection and stop the reinfection of the common duct and liver bile capillaries. The possible beneficial influence of removal of an infected gallbladder upon the future course of the heart disease also influenced

the decision in favor of taking the risk of cholecystectomy.

The operation was performed on October 8, 1938. An obliterated gallbladder was found to contain *B. coli communis* in the fibrotic wall and in the gallstones. The common duct contained no stones. Convalescence was uneventful. The patient was referred back to the gallbladder clinic for examination. No *B. coli* has been recovered from the duodenal bile specimens during the following eighteen months. The symptom syndrome has changed, and little abdominal pain persists. Gastric symptoms of dyspepsia are still troublesome and representative of the type of hypotonic gallbladder dyskinesia so frequently found in patients of the type this individual represents.

Summary

A review of 307 operative patients has been made to determine the incidence and cause of postoperative symptoms. Recurrent symptoms have been found in 63 per cent of all cases.

The most common cause of recurrent symptoms was found to be dyskinesia of the common duct and bile stasis in 84 per cent of the recurrent-symptom group. This finding of common duct dyskinesia was noted in both calculous and non calculous disease.

Four cases have been chosen to show in Case 1, a prompt response to cholecystectomy with cure in an infectious cholecystitis without dyskinesia, in Case 2, a delayed response to cholecystectomy with cure in an infectious cholecystitis from a blood-stream origin with dyskinesia after a period of medical treatment of the dyskinesia, in Case 3, an incomplete case of infectious cholecystitis in which the source of infection spread to the gallbladder through the lymphatics—retention of the infection in the gallbladder and control to date of the recurrent acute cholecystitis by medical treatment of the dyskinesia with the residual threat of recurring acute cholecystitis so long as the gallbladder remains, due to the inability to eradicate colon bacillus from the gallbladder by medical means, and in Case 4, an incomplete cure of an infectious cholecystitis by multiple surgical drainage,

ficacy of therapy in the treatment of acute and chronic renal infections, the need of close cooperation between the internist or urologist and the bacteriologist is becoming increasingly evident. Wherever possible, the knowledge obtained from a Gram's stain study of a smear made from a freshly collected specimen of the patient's urine should be supplemented by cultural studies of the urine collected under aseptic conditions. The variations in reaction to treatment of some of the different genera, species, and types of the aerobic, gram-negative bacilli found in the urinary tract is shown in a recent report by Sandholzer and Scott.²⁰ In a study of 285 patients with these infections, it was found that the bacteria fell into six different genera and more than forty species or types. Of these, the genus *Escherichia* appeared in 83 per cent of the cultures and *Aerobacter* in 13 per cent. Sixty-six per cent of the patients with *Escherichia* infections responded to treatment. Of these, 80 per cent of the patients with the gamma hemolytic type of infection were cured, while only 66 per cent of the patients with the alpha type responded. Only 38 per cent of the patients infected with the species *Escherichia communior* were cured. In the genus *Aerobacter* group only 42 per cent of the patients were cured, and not a single patient having a hemolytic type of infection responded to treatment. This same variation to treatment held true in the case of many other species and types of bacteria considered in this study. However, inasmuch as this work was done before the introduction of mandelic acid and the various derivatives of sulfanilamide, it is quite possible that some future study of this character may disclose a better response to treatment by some of the above-mentioned species and types.

Pathologic Changes in Chronic Renal Infection

In the medical group of renal diseases the pathologic changes that are present are unrelated to direct bacterial invasion, while in the surgical group the changes in

the kidney are the direct result of bacterial invasion. In the surgical or infectious group, in the early stages, cocci are more commonly found in the renal cortex, while the bacilli tend to invade the medulla. However, both types of organisms can, and usually do, pass from one portion of the kidney to the other with great rapidity. The predilection of the staphylococcus for the renal cortex often results in an acute nephritis characterized by the presence of multiple cortical abscesses and carbuncle formation. However, in the chronic stages of renal infection with extensive involvement of the renal parenchyma, the pathologic changes resulting from coccic and gram-negative bacillary infections are quite similar.

The three most common pathologic patterns resulting from chronic non-tuberculous infections of the kidney are the contracted kidney of atrophic pyelonephritis, the infected hydronephrotic kidney, and the pyonephrotic kidney. Excellent detailed descriptions of the pathologic changes resulting from atrophic pyelonephritis are presented by Löhlein,¹⁶ Staemmler and Dapheide,²¹ Hashinger and Dapheide,¹¹ Jacoby,¹² and Lieberthal.¹⁵ The capsule, which is usually white, thick, and adherent in spots, covers the granular surface of the small, firm kidney. The cortex is thin and varies in thickness. The papillae are much smaller than normal, and streaks of scar tissue are seen in the medulla. The cortical and medullary markings are frequently indistinct or obliterated. The pelvis may be normal in size and form but is usually slightly dilated. Although the ureter undoubtedly is involved, stricture is not common. The microscopic picture shows all stages of the replacement of normal tissue by fibrous tissue resulting from repeated multiple focal infections. The tubules and interstitial structures are more rapidly destroyed than the glomeruli. The pathologic picture of the infected hydronephrotic kidney, with its lobulated surface, its distended pelvis, the flattened papillae, and the thinned medullary portion that shows on its cut surface the scars due to multiple foci of in-

tions is past. As will be shown later, there are many factors that must be considered in the proper treatment of these cases. When these requirements have been met and the infection still tends to persist or recur, a thorough urologic study should be made to determine whether or not a pathologic lesion that is retarding recovery is present.

Causative Factors in Chronic Renal Infection

The most common cause of persistent or recurrent nontuberculous renal infections is the presence of some form of obstructive uropathy. Whether or not a lesion produces unilateral or bilateral obstruction depends upon its location. Obstructive lesions that involve the urethra, vesical neck, and the bladder in such a way as to obstruct both ureteral orifices can, and frequently do, cause bilateral ureteral and renal dilatation.

The most common obstructive lesions are stricture, benign and malignant tumors, stones, foreign bodies, and congenital anomalies such as aberrant vessels, bifid pelves, valves, etc. There are at least eleven different pathologic lesions of the kidney and the ureter in the region of the ureteropelvic junction which are capable of producing obstruction. Obstruction occurring in the rest of the ureter can be explained by the presence of any one of ten or more different lesions. About the same number of obstructive lesions can be found in the bladder. There are at least twenty lesions of the male genital organs that can obstruct the urinary outflow. In the short urethra of the female, obstructive lesions are not so numerous, but even here five or six different conditions capable of causing obstructions are commonly found.

Although the presence of obstruction is of great significance with reference to the development and persistence of renal infection, there are other etiologic factors that must be considered briefly at this time. The role of focal infection in renal infection is well established. In the head, the teeth, tonsils, sinuses, and adenoids

must be checked. Skin infections in the form of boils and carbuncles frequently cause acute renal infections, some of which may assume chronic characteristics. Chronic infections of bony and glandular structures may be the source of renal infections. The genital organs of both sexes must be given careful study in the search for a focus of infection. Probably the most common source of renal infection is the intestinal tract. Another cause of renal infection is trauma. This may result from instrumentation, the presence of a foreign body or movement as in the case of the ptosed kidney. More recently, it has been observed that vitamin deficiency may either directly or indirectly play a role in renal infection.

Bacteriology of Renal Infection

Bacteria reach the kidney either by means of the blood stream or by direct ascension from the genitourinary organs. Their effect upon the kidney depends upon the type and virulence of the organism, the degree of infection, the natural immunity of the patient, and whether or not some additional form of pathology is present that is conducive to the spread and maintenance of infection.

Statistics vary somewhat with reference to the relative frequency with which the various bacteria are found in the urine of these patients. On an average it would seem that around 65 per cent of the patients are infected with a member of the aerobic gram-negative bacillary group. About 15 per cent of the patients have coccic infections, the staphylococcus being found a little more than twice as often as the streptococcus. Mixed infections are not uncommon. As pointed out by Runerberg,¹⁹ Longcope,¹⁷ Braasch,² and others, cultures of the urine from patients in the advanced stages of atrophic pyelonephritis are often negative. In fact, Braasch,² in his series of 200 cases of this character, found abacterial urine in 20 per cent of the patients.

Because of the tendency toward spec-

excretion as shown by the phthalein and urea clearance tests. In these patients, as the curve of excretion decreases, there is a corresponding rise in the blood non-protein nitrogen and creatinine.

In the majority of these cases retrograde studies are of considerable more diagnostic value than intravenous pyelography. From the retrograde study we are able to determine whether or not the infection is bilateral, the type of bacteria in each kidney, whether or not the infection is mixed, and the relative loss of renal function. The retrograde pyelograms are usually more distinct in outline. Changes in the pyelographic picture due to chronic atrophic pyelonephritis may be considerable or entirely absent. As a rule there is definite ureterectasis and caliectasis. The infundibula and the renal pelvis are narrowed, and the calices show blunting that is irregular in contrast to the smooth blunting of uncomplicated obstruction. The ureterectasis, which is usually present in some degree in the retrograde picture, is seldom observed in intravenous studies. This dilation and irregularity may involve the whole ureter and result in definite shortening of that organ, or it may be found only in its lower third. In spite of the persistent nature of chronic atrophic pyelonephritis of hemogenous origin, secondary stricture of the ureter is seldom found.

Inasmuch as chronic infected hydronephrosis and pyonephrosis are caused by urinary obstruction plus infection, their pyelographic pictures are quite distinct from those of chronic atrophic pyelonephritis. In both there is evidence of obstruction of either the ureter or kidney pelvis. In chronic infected hydronephrosis the degree of dilation of the renal pelvis may be moderate or great. Because of infection and stasis, secondary calculi may be seen. In the advanced cases the infundibula are shortened, the minor calices are greatly enlarged, and their outline is smooth. In chronic pyonephrosis there is more apt to be a secondary atrophy of the renal parenchyma and pelvis. In both conditions ureterectasis is present.

Treatment

Inasmuch as most patients in the acute and subacute stages of nontuberculous renal infections can be cured provided they receive proper treatment and co-operate fully, it is extremely important that the diagnosis be made before the disease has caused any serious damage and that proper therapy be instituted at once. If these favorable conditions were consistently present in all cases of this character, the tragic picture of the patient in adolescence and early adult life in the terminal stage of this disease would be a rare sight indeed.

Therefore, it is quite fitting that we consider somewhat in detail the proper treatment of patients in the acute and very early stages of this disease. The patient should be put to bed and fluids forced until urinary antiseptics are started. Where possible, because of the varying response of different genera, species, and types of bacteria to various forms of chemotherapy, cultural and Gram's stain studies should be made of the patient's urine collected under aseptic conditions. The pH of the urine should be determined before chemotherapy is started, and the urine should be maintained at the degree of alkalinity or acidity at which the selected urinary antiseptic works most satisfactorily. A careful search should be made for foci of infection, and these should be eliminated where possible. The patient's habits of diet, elimination, work, and recreation should be studied and corrected if necessary.

The choice of the proper urinary antiseptic for oral use should be governed by the observations made in the Gram's stain and cultural studies of the urine. Many of the aerobic gram-negative bacillary infections respond satisfactorily to mandelic acid therapy. This drug is most effective in those cases in which it is possible to maintain the pH of the urine at 4.8 or lower. In the presence of urea-splitting infections it is better to use acid sodium phosphate rather than ammonium chloride to lower the pH of the urine. If mandelic acid cannot be tolerated or is ineffective, sulfanilamide or neoprotosil

fection, is familiar to all of us. The difference between an infected hydronephrotic kidney in the last stages of the disease and the pyonephrotic kidney is not great. The pyonephrotic kidney is a dead kidney. The renal parenchyma is completely replaced by scar or fatty tissue, and its dilated pelvis is filled with thick pus.

Diagnosis

As a rule, there is much of diagnostic value in the history of these patients with chronic nontuberculous renal disease. The infections are more common in the woman than in the man. Frequently, there is a story of recurrent attacks of general malaise, chills and fever, and pain over one or both kidney regions. Occasionally, there is nausea and vomiting. These attacks vary in duration from a few days to several weeks and may have been occurring over a period of months or years. Where the bladder is secondarily involved there is a history of recurrent attacks of frequency, urgency, dysuria, pyuria, and, occasionally, hematuria and albuminuria. Except for the terminal stage, patients with bilateral atrophic pyelonephritis are quite comfortable in the intervals between their acute and subacute attacks. The terminal stage is characterized by headaches, dizziness, visual disturbances, loss of appetite and weight, lassitude, dyspnea, convulsions, and coma. Because of the weight of the kidney and the presence of perinephritis, patients in the advanced stage of infected hydronephrosis and pyonephrosis may have a persistent pain over the kidney region even in the quiescent stage of the disease.

The physical observations in these cases are governed by the degree of kidney damage and whether the disease is active or quiescent. In the midst of an acute attack there is usually a high fever and all the other common findings of an acute infection. However, these patients do not appear as toxic as the patients with an acute focal nephritis due to cortical involvement with the staphylococcus or streptococcus. Over the kidney region

there is pain, tenderness, and spasm. Between attacks in the early stage of these infections, the physical findings are usually negative except for the genital tract of the male, where a secondary prostatitis is frequently discovered. In the terminal stage there frequently is slight pallor, evidence of loss of weight, and dry skin. A very high percentage of the patients with bilateral atrophic pyelonephritis and many of them with unilateral atrophic pyelonephritis, infected pyelonephritis, and pyonephrosis develop marked hypertension in the more advanced stages of the disease. In such cases, especially in the terminal stage of the disease, a study of the patient's eyegrounds frequently shows single hemorrhages or cotton-wool patches in the retina such as occur in septicemia or toxemia of any origin.

The information obtained from laboratory studies varies considerably with the progress of the disease. In the early stages of the disease, especially during an acute attack, there is high leukocytosis but practically no change in the erythrocyte count and hemoglobin. In the urine, pus and bacteria are practically always present, and erythrocytes may or may not be present. The erythrocyte count and hemoglobin are low, and the leukocyte count is considerably elevated in the late stage of chronic renal infection.

In about 20 per cent of the patients with chronic atrophic pyelonephritis in the late stage of the disease the bacteria disappear from the urine, while bacteria are practically always found in the urine of patients with chronic infected hydronephrosis and pyonephrosis. The amount of albumin in the urine varies from a trace to a moderate amount. Leukocytes are always present in the urine, sometimes in large numbers. Casts are occasionally present, and erythrocytes are practically always found. The specific gravity of the urine of patients having bilateral infections in the advanced stage becomes fixed between 1.010 and 1.012. As the destructive process progresses in the bilateral types of infection, there is a corresponding decrease in the curve of renal

discussion at this time. Repeated small transfusions and other forms of intravenous therapy may prolong life for a little while, but, regardless of what one does, death from uremia or a complicating disease is the inevitable end.

Summary

Within the past few years repeated experimental and clinical observations indicate the need of close cooperation between the internist, urologist, and bacteriologist in the treatment of nontuberculous infections of the kidney. From the bacteriologist comes the information as to the genus, species, and type of organism that is found in the urine. It is upon this information that the choice of the urinary antiseptic should be made. The part played by renal ischemia, resulting from persistent renal infections or renal obstruction, in the production of secondary hypertension is generally accepted. It is the role of the urologist to discover and correct, if possible, any abnormality in the urinary tract that is contributing toward the maintenance of the renal infection or the development of secondary hypertension.

There are factors outside the genitourinary tract that may play a role in the persistence of renal infections and the recurrence of acute attacks. Among the more important of these are foci of infection and habits of diet and elimination.

The three most common pathologic changes associated with these chronic nontuberculous infections are the infected hydronephrotic kidney, the pyonephrotic kidney, and the contracted kidney of atrophic pyelonephritis.

The diagnosis of any of the types of chronic nontuberculous renal infections is not difficult. As a rule the information obtained from a careful history of the patient, a complete physical examination, and the routine laboratory studies not only gives a definite lead as to the diagnosis but also suggests just what special studies should be made. Retrograde studies, including pyelograms, give much more information as to the kind and degree of pathology that is present than can be

obtained from intravenous pyelography.

The most successful method of treating chronic nontuberculous renal infections is to be found in the field of preventive medicine. The cooperative patient who receives intelligent, thorough treatment during the acute or subacute stage of the disease very seldom develops a chronic infection.

The results obtained in the treatment of patients with chronic infections are frequently most discouraging. Success in these cases depends upon the intelligent use of the urinary antiseptics and the early detection and elimination of any factors that may be contributing to the persistence of the infection.

In selected cases surgery is of great value. The surgical relief of urinary obstruction and the removal of foreign bodies are frequently followed by the rapid disappearance of the infection. When the disease is unilateral and advanced in character, especially if there is a complicating hypertension, nephrectomy is recommended.

For the pitiful patient in the terminal stage of bilateral atrophic nephritis, there is little to offer except palliative treatment.

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should be tried Fewer reactions occur and the drug is more effective if the patient is instructed to take an equal amount of soda bicarbonate whenever he takes either sulfanilamide or neoprontosil *Aerobacter aerogenes* and especially *Proteus* infections are quite resistant to urinary antiseptics The urine of a patient with a *Bacillus proteus* infection, due to the urea-splitting property of this organism, frequently remains alkaline in spite of all efforts to make it acid Consequently, mandelic acid or the ketogenic diet, either of which requires a highly acid urine to be most effective, are of much less value in such cases than neoprontosil, which acts satisfactorily in an alkaline urine In the treatment of these aerobic gram-negative infections, methenamine in large doses will occasionally prove successful when the drugs mentioned above have failed

Within the past few years some progress has been made in the treatment of acute and subacute pyelonephritis due to coccic infections Over a period of years we have observed quite satisfactory results in uncomplicated cases of staphylococcus pyelonephritis by the use of repeated small doses of neoarsphenamine Mandelic acid therapy is practically specific in the treatment of the uncomplicated case of *Streptococcus faecalis* Sulfanilamide is of no value in such cases and is none too satisfactory in the presence of the non-hemolytic strains of the streptococcus However, against certain hemolytic staphylococcus and streptococcus strains, sulfanilamide and neoprontosil are occasionally quite effective Recent and rather limited clinical experiments with sulfamethythyasole by Marshall in our clinic would seem to indicate that it was of real value in the treatment of coccic infections of the urinary tract, but, because of its reported reaction upon the peripheral nerves, its use was discontinued However, there is every reason to believe that the near future will see the introduction of a new and much less toxic member of the sulfanilamide family that will be found quite effective in such cases We have seen some surprisingly rapid

cures of early staphylococcic and streptococcic infections by the use of methenamine and acid sodium phosphate

If, in spite of careful treatment and satisfactory cooperation on the part of the patient, stained smears and cultures of the urine continue to be positive or the infection disappears only to recur in a short time, a retrograde study is indicated Such studies frequently reveal the presence of some complicating factor which, if removed in time, results in the rapid disappearance of the infection

The response to treatment of patients with advanced chronic atrophic pyelonephritis and infected hydronephrosis is usually very discouraging Often the remaining renal function is so slight that urinary antiseptics cannot be secreted in sufficient concentration to be of any real value Where there is great loss of renal function, an attempt to acidify the urine and use mandelic acid therapy is not only useless but may even be dangerous. In such cases it is better to use a drug that maintains its bactericidal properties even in the presence of an alkaline urine. Where there is a marked loss of renal function due to a persistent unilateral renal infection and especially if there is a secondary hypertension, a nephrectomy should be considered provided the function of the remaining kidney is good Even in the presence of bilateral renal obstruction and infection, the surgical relief of the obstruction frequently checks the infectious process Lavage of the renal pelves as a supplementary measure is sometimes helpful if there remains enough renal tissue to enable the patient to secrete a moderately high concentration of the urinary antiseptic While the true value of autogenous vaccines in these persistent cases of renal infection has never been definitely settled, we still use them in selected cases

Aside from the use of palliative measures there is little that can be done for patients in the terminal stage of renal insufficiency The customary advice concerning diet, fluid intake, exposure to cold, rest, etc., is familiar to all practitioners of medicine and needs no further

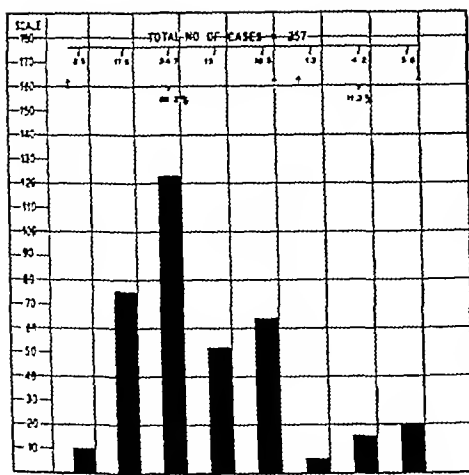


CHART 1 Therapeutic response to the drug

includes a multitude of hospitals with variations in clinical interpretation

Course of the Pneumonia

On an average, patients manifested their first maintained clinical improvement late in the second day from the beginning of hospitalization, and the temperature fell significantly late on the fourth day. This group, on an average, had approximately two days of pneumonia prior to admission to the hospital. As one observes by Chart 1, a typical temperature response in uncomplicated cases was observed in 88.8 per cent of the entire group, and this percentage responded with a normal temperature in from eight to forty-eight hours.

Temperature Response—Chart 1—Ten cases responded in eight hours, 75 cases responded in sixteen hours, 123 cases responded in twenty-four hours, 52 cases responded in thirty-two to forty hours, and 64 cases responded in forty-eight hours.

The 11.2 per cent of the cases that did not respond within forty-eight hours proved to be nonpneumococcus pneumonia or to have had complications.

Failures and Relapses—Approximately 11 pursued the characteristic course of pneumonia without apparent effect from the drug.

Duration of Abnormal Roentgenologic Densities—No statistical difference could be elicited from studies in this series compared with observations in cases treated by serum or symptomatically.

Age Incidence—Table 1—It was noted that all age groups were well represented. The percentage in each age group was estimated.

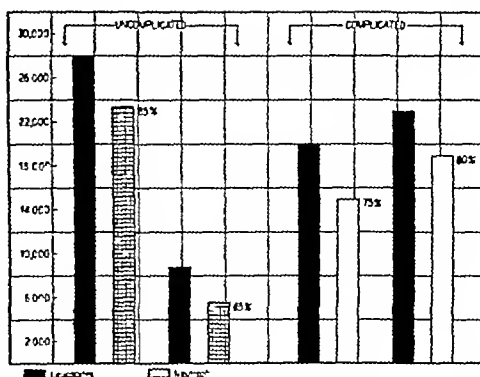


CHART 2 Hematologic response of pneumonia cases to sulfapyridine

Concentration of Sulfapyridine in the Blood—One hundred and twelve cases were studied. The average for all the age groups was approximately 4.1 mg per hundred cubic centimeters of blood. Some had as much as 15.6 to 23 mg of the drug with no apparent ill effect.

Types of Pneumonia—Two hundred and thirty-eight cases or 66.7 per cent had lobar pneumonia and 119 cases, or 33.3 per cent, had broncho pneumonia.

Bacteria—There were 6 positive cases in this group, negative, 103, not done, 253, and contaminated, 1.

Empyema

	Cases
Admitted with signs of pleural exudate	8
Effect of drug therapy	0
Empyema as a result of adequate drug therapy	7
Thoracotomy	4
No operation	3
Sterile exudate	2

Empyema Exudate (Drug Concentration)	Blood Level
3.2 mg per 100 cc.	4.6 mg per 100 cc.
2.5 mg per 100 cc.	4.9 mg per 100 cc.
2.8 mg per 100 cc.	1.4 mg per 100 cc.
7.2 mg per 100 cc.	8.43 mg per 100 cc.
8.6 mg per 100 cc.	9.3 mg per 100 cc.

One notes that 3 out of 7 cases of empyema did not need thoracotomy and that in 1 of these cases of the writer's own series 50 cc of purulent exudate was withdrawn. This was a type III pneumococcus. The other 2 were also proved purulent exudate by thoracentesis.

One might justifiably wonder whether treatment of pneumonia with this drug does not reduce the incidence of empyema. Empyema itself is not influenced by the drug administration. It was noted that in empyema exudate the sulfa-

PNEUMONIA IN CHILDREN TREATED WITH SULFAPYRIDINE*

THE following statistical data are based on the study of 357 cases of pneumonia treated with sulfapyridine

This study was instituted to determine for the membership of the Academy the optimum dosage, the most suitable method of administration, and the dangers of sulfapyridine so that physicians might know as soon as possible how widely it should be used. Because pneumonia has a relatively low mortality in the young, it is essential that conclusions should be based on other considerations, such as incidence of complications and the severity of the disease, which are variable from year to year. It may be noted that in this study 43 cases were from a hospital for contagious diseases, which accounts for the prolonged course and more serious complications.

Plan of Study

Medication was generally instituted before bacteriologic or roentgenologic con-

* This survey was proposed by the Brooklyn Academy of Pediatrics in whose membership are the directors and attendings of the following hospitals which contributed the data.

Nurwegian Hospital	Dr John A. Monfort, <i>Chairman</i>
Brooklyn Hospital	Dr Harry Naumer
Cumberland Hospital	Dr Thurman B Givan
Israel Zion Hospital	Dr Murray B Gordon
Jewish Hospital	
Dr Benjamin Kramer and Hyman Marshall	
Kings County Hospital	Dr George E Brockway
Kingston Avenue Hospital	Dr Thurman B Givan
Mary Immaculate Hospital	Dr Alfred Travillino
Meadowbrook Hospital	Dr Harold Butman
St. Catherine's Hospital	Dr Joseph E Regan
St. John's Hospital	Dr Paul L Parrish

firmation of pneumonia was obtained. Patients whose diagnosis was not substantiated by x-ray as being pneumonia were not included in this group. The administration of the drug was begun as soon as material from the throat had been secured for culture. One and one-half grains of sulfapyridine was administered per pound of body weight for the first twenty-four hours, and one-half of that dose, or $\frac{3}{4}$ grain per pound of body weight, was given thereafter until the patient had been afebrile for about three days. The drug was powdered and suspended in about 1 ounce of water for oral administration. This makes a relatively insoluble compound. Fluids can be administered later to promote absorption. In this study there were only about 111 determinations of the levels of free sulfapyridine in the blood.

Sputum was secured by swabs introduced into the oropharynx, with the patient's head hyperextended and the tongue depressed, and held in the throat until coughing was elicited. Blood for culture was obtained in about 150 cases. Fluids obtained by thoracentesis were examined for sulfapyridine concentration.

It is realized that a plan of study of such character may be conducive to certain errors of observation because it

TABLE 1—AGE INCIDENCE

Age of Child	Number	Percentage of Total
0-6 mo	30	8.2
6-12 mo	44	12.3
1-2 yr	49	13.7
2-3 yr	49	13.7
3-4 yr	44	12.8
4-5 yr	18	5.3
5-6 yr	18	5.2
6-7 yr	26	7.6
7-8 yr	19	5.4
8-9 yr	14	3.7
9-10 yr	14	3.7
10-11 yr	12	3.3
11-12 yr	20	5.7

TABLE 2—TYPES OF PNEUMOCOCCI ISOLATED (OTHER ORGANISMS)

Types	Cases	Types	Cases	Types	Cases
I	26	XI	1	XXI	1
II	3	XII	1	XXII	4
III	14	XIII	4	XXIII	5
IV	6	XIV	15	XXIV	0
V	6	XV	3	XXV	3
VI	20	XVI	1	XXVI	0
VII	14	XVII	3	XXVII	0
VIII	9	XVIII	6	XXVIII	3
IX	4	XIX	13	XXIX	1
X	2	XX	1	XXX	3
Strep Hemolyticus	8			Total	
Staph and Strep	5			cases typed	185
Pfeiffer's bacillus	1				

Read by Dr John A. Monfort before the Brooklyn Academy of Pediatrics
October 25, 1939

TABLE 4—MORTALITY

Age	Died	Course	Type
10 mo	1 day	Surgical parotitis ec zema	Strep bem
2 yr	2 days	Dehydration	X
5 mo	6 days	Lobar pneumonia	
3 mo	2 days	Otitis media pur	
2 yr	2 days	Noma	IV
11 mo		In extremis on admission	
3 mo	36 hr	In extremis on admission	
4 mo	3 days	Atelectasis	III
3 1/2 yr	18 days	Congenital heart, pneumonia	III
Cases 357		Recovered 342	Pfeiffer's bacillus
			Died 15

TABLE 5—DOSAGE IN 201 CASES

Grains	Grams	Cases	Grains	Grams	Cases
Under 15					
15		5	240	16	
30		3	270	18	
60	2	21	300	20	2
90	4	35	375	25	14
120	6	33	450	30	6
150	8	26	525	35	2
180	10	30	600	40	1
210	12	3	775	51 7	1
	14	3			
Total cases 201		18			

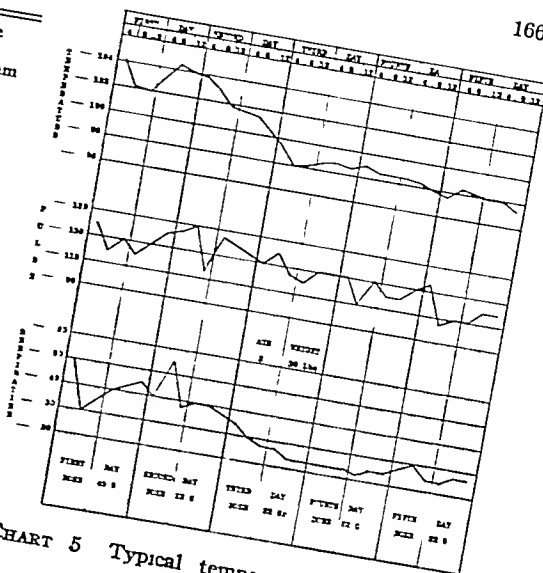


CHART 5 Typical temperature response in uncomplicated cases

Conclusions

- 1 From the foregoing it is reasonable to conclude that sulfapyridine shortens the course of pneumonia in children by approximately three to five days and that it is innocuous.
- 2 It is noted that the clinical course is significantly shortened.
- 3 The complications from the drug are of minor character.
- 4 Cyanosis does not embarrass the patient or respond to oxygen therapy.
- 5 Some cases of pneumonia in children are refractory to the drug. It is probably caused by complications or by the fact that the pneumonia is not caused by the pneumococcus organism.
- 6 The optimum dosage of sulfapyridine is the amount that secures a level in the blood of 4 to 4.5 mg.
- 7 An initial large dose is desirable, and the drug should be discontinued as soon as the temperature falls to normal rather than three or four days after a normal temperature in order to obviate possible neutropenia.
- 8 Vomiting is noted in about 36 per cent of the cases.
- 9 Nearly 88 per cent of the patients in this series were clinically improved and developed a normal temperature within forty-eight hours.
- 10 Hematologic response to this drug in the uncomplicated cases was as follows. In the uncomplicated cases there was an immediate response. The leukocytes and the neutrophils dropped within normal limits, while in the complicated cases the leukocytes and neutrophils became increased.

Correspondence

WAR DEPARTMENT
ARMY MEDICAL LIBRARY
WASHINGTON, D C

October 25, 1940

To the Editor

I am directed by the Surgeon General to inform you that authors' reprints are gratefully received at the Army Medical Library. They are placed in a special collection catalogued by author and thus form a ready bibliography of the work of any given writer and a valuable supplementary source of material when the

volume of original publication is temporarily unavailable at the bindery or on loan.
Editorial notice of this collection would be much appreciated.

Very respectfully,
HAROLD W. JONES
Colonel Medical Corps, U S Army and Librarian

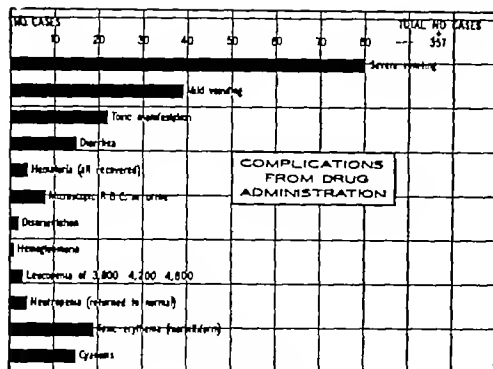


CHART 3

TABLE 3—THE MORTALITY WAS 4.2 PER CENT GROSS THE CORRECTED MORTALITY, WHEN WE ELIMINATE THOSE WHO DIED WITHIN TWENTY FOUR HOURS, WAS 3 PER CENT

Age	Died	Course	Type
2 yr	12 hr	Lobar pneumonia dehydration, acidosis	I
3 yr	2 days	Encephalitis dehydration acidosis	Staph. and Strep. nonhem.
7 yr	2 days	Diabetic coma diaphragm pleurisy encephalitis	Staph. alb.
2 yr	7 days	Empyema 2 lobes	Strep. hem.
1 yr	2 days	Pertussis moribund bronchopneumonia	
6 wk	22 days	Pertussis bronchopneumonia, convulsions	III

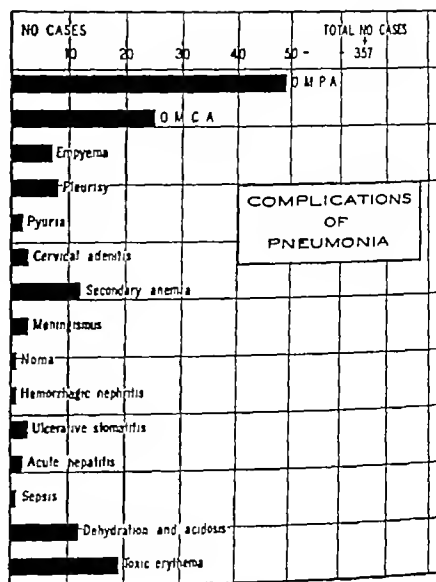


CHART 4

pyridine level was a little less than that of the blood concentration

Hematologic Response of Pneumonia Cases to Sulfapyridine—Chart 2—A composite chart was made of the hematologic response to the drug. It was noted that in the cases that were uncomplicated there was a prompt reduction of leukocytes and the neutrophils, as is demonstrated by the chart. In complicated cases the response was either very slight or the leukocytes and neutrophils were increased so that one may prognosticate by the study of the hematologic chart as to the course of the disease.

Types of Pneumococci Isolated—Table 2—The types encountered most frequently were types I, III, VI, VII, XIV, and XIX.

Mortality—Tables 3 and 4—Of 357 cases, 15 died. Eliminating those who died within twenty-four hours the gross mortality was 3 per cent.

Dosage—Table 5—The majority of cases received the drug until afebrile for three days. Some cases were treated for a longer period of time because of complications.

Toxic Effects of the Drug—Chart 3—Severe

vomiting was encountered in 80 cases, while mild vomiting was noted in 39 cases. This vomiting was unrelated to the time of administration of the drug. In 8 cases vomiting was so severe that the drug had to be administered rectally.

Cyanosis was noted in 15 cases. It was rather difficult to establish whether this symptom was due to the pneumonia or the drug. Diarrhea was noted in 15 cases. Hematuria was observed in 4 cases. It disappeared entirely by the end of the pneumonia. Microscopic red blood cells were noted in 8 cases. The urine in all the cases was negative before discharge. Hemoglobinuria was noted in 1 case. Leukopenia was observed in 3 cases (see Chart 3). The blood returned to normal when the drug was discontinued. Neutropenia was noted in 4 cases. The blood returned to normal at the termination of the disease.

Toxic erythema—A generalized maculopapular rash was encountered in 15 cases, 4 showed a cutaneous eruption scarlatiniform in nature. When the drug was discontinued, the rash disappeared in twenty-four to forty-eight hours.

There was 1 case of acute hemorrhagic nephritis which may have been caused by the drug or the pneumonia.

Complications of Pneumonia—Chart 4—Forty-nine cases had purulent otitis media and 115 cases had catarrhal otitis media. One case had noma with a fatal termination. Ulcerative stomatitis was encountered in 3 cases, while acute hepatitis was noted in 2 cases.

spinally, was employed in an attempt to find a remedy. The first dose consisted of 1 cc of a 50 per cent solution, which was injected intrathecally between the second and third lumbar vertebrae and was given to relieve an abdominal crisis. The patient was lying on his side in bed during the administration. Some benefit occurred, there seemed to be a shortened duration and diminished severity as compared to the usual attack. Several weeks later another crisis occurred, involving the rectum and accompanied by severe pain in the lower extremities. The same treatment was employed with the exception that 2 cc was given. No alleviation of the pain having occurred after an interval of two days, an additional 2 cc. was given intrathecally. It is well to note that after each injection there was a temporary aggravation of the patient's pain. On the occasion of the last injection, the patient experienced the usual phenomenon of accentuated pain and suddenly sat up in bed. It was with some difficulty that he was prevailed upon to resume a horizontal position. Almost immediately he began to complain of severe pain in the chest and next a very short time by pain in the chest and next a choking sensation. Shortly thereafter he became comatose. There was a cessation of breathing and he was given artificial respiration. A hypodermic injection of 10 minims of adrenalin chloride 1,000 and 2 cc of coramine brought about some improvement, although he remained in a coma. In a few hours he became quite restless and delirious, requiring close supervision and restraint. The following day he was given 1,000 cc of 10 per cent glucose in saline, intravenously, with a definite show of improvement. The delirium, however, persisted for about two days. When he regained consciousness, he had no control over his bladder or anal reflexes. This state continued for an additional two days. During this time he began to take a liquid diet, and his general condition then improved rapidly. However, the pains in his lower extremities remained, and for several days thereafter he required occasional hypodermic injections of morphine sulfate.

1/4 grain) and hyoscine hydrobromide (1/100 grain).

When questioned relative to his delirium, he recounted some interesting hallucinations which he had experienced. One of these was the vision of a large, old man's face from which exuded tear drops the size of a fist. Another was the vision of a man with a heavy beard whose face was enormously elongated. At intervals this man would say "Crime does not pay." The patient had good insight into his condition in that he knew these experiences were hallucinatory, although he stated that during his delirium they seemed quite real.

Comment

It would seem that the delirium produced was the immediate result of cerebral irritation from the magnesium sulfate injected intrathecally. Possibly the patient's sudden change of position immediately following the injection caused a rapid diffusion of the drug upward so that the brain was directly affected. It is of interest to note that the intrathecal administration of a solution of magnesium sulfate in this case had little, if any palliative action, and in fact its use was not without danger.

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SUDDEN CARDIAC ARREST UNDER ANESTHESIA

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(From the Department of Anesthesiology St Luke's Hospital)

Case Report

A well developed white man, aged 33 was admitted for right inguinal herniorrhaphy. History and Physical Examination—The patient was a severe chronic alcoholic. He had been treated elsewhere five months before for "jaundice," said to have been caused by alcoholism and had taken less (one pint of whiskey daily) since then. Liver was not palpable and the history and physical examination was otherwise unimportant. A small, right indirect inguinal hernia was present.

Anesthesia—He was apprehensive about an operation. Morphine sulfate 1/100 and hyoscine hydrobromide 1/100 were given one and one-half hours before the induction of anesthesia, with satisfactory sedative effect, though he was still

awake on coming to the operating room. Blood pressure taken then was 98/64.

Anesthesia was started with nitrous oxide and ether at 10 25 A M and produced excitement immediately. This subsided shortly but a prolonged second stage could not be avoided.

The incision was made at 10 45. Up to within two minutes of that time, the patient had moved his legs. One-half ounce of ether had been used. The color was good but periods of cyanosis had previously occurred.

Cardiac Arrest—About two and one-half minutes after the incision was made, the pulse and respiration ceased almost simultaneously. The color, which had been satisfactory, changed to ashen gray in his face. A mottled cyanosis soon appeared particularly on chest and arms.

Case Reports

TOXIC DELIRIUM FOLLOWING INTRATHECAL MAGNESIUM SULFATE IN TABETIC CRISIS

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(From the Utica State Hospital)

THE literature at the present time indicates that the treatment of tabetic crises is limited and inefficient. Specific agents in the form of arsenicals, heavy metals, and malaria have been found effective in only 24 per cent of the cases,^{1,2} thus necessitating a constant search for a suitable symptomatic remedy. Among the drugs used for the relief of the excruciating pain are morphine (subcutaneously), adrenalin (intramuscularly), chloral and sodium bromide (by rectum), the barbiturates by any available route, and magnesium sulfate (intramuscularly or intraspinaly).^{3,4} Neurosurgery has also been employed with varying results, and more recently there have been reports of treatment by subcutaneous insulin⁵ and intramuscular, intravenous, or intrathecal vitamin B₁.^{6,7} Stokes⁸ mentions a gymnastic exercise that consists of "bending a standing patient backward over the foot of the bed until his feet fly from the floor." In attempting to relieve the case under discussion many of these treatments were administered. None was found to be more than partially effective.

This report concerns the production of a toxic delirium by the intraspinal administration of 2 cc of 50 per cent magnesium sulfate solution. In spite of the widespread use of this therapy no other reports of a similar nature could be found in the literature.

Case Report

J. W., aged 40, white male, was admitted to the Utica State Hospital on October 3, 1936, with a chief complaint of severe intermittent pain in the abdomen and back accompanied by vomiting and mental depression. The depression and an attempted suicide were the immediate causes of his admission, although his physical symptoms had been in evidence for six years. There was also a history of morphine addiction (with recovery) apparently brought about by the judicious use of this drug for relief of pain.

Physical Examination—Examination showed a well-developed, poorly nourished man of asthenic body build, not appearing acutely ill. His blood pressure was 110/70, and examination of his heart was essentially negative. Lung expansion was diminished on the right, with some tenderness on percussion, decreased resonance anteriorly and in the axilla, and increased breath

sounds and vocal fremitus over these areas. A history of tuberculosis was elicited with cough, dyspnea, and hemoptysis over a period of two years. The patient admitted having had syphilis and gonorrhea in 1920, and a scar was observed on the penis. Balancing was poor, and there was slight swaying in the Romberg test. Knee jerks and ankle jerks were absent. Ophthalmologic examination revealed essentially normal vision right eye 20/20, left eye 20/25 uncorrected. The pupils were round but the right was much smaller than the left. There was no reaction to light. The ear, nose, and throat examinations were essentially negative except for some congestion of the nasal mucous membrane on the right and enlargement of the turbinates on the left.

Laboratory Findings—Blood and spinal fluid Wassermanns were each negative in the alcoholic antigens but 4 plus in the cholesterinized antigens. A faint trace of globulin and 6 cells appeared in the spinal fluid. Colloidal gold and mastic tests were negative. The blood sugar was 96 mg per hundred cubic centimeters and nonprotein nitrogen was 33 mg per hundred cubic centimeters. Urinalysis was essentially negative. A complete blood count revealed the following: r.b.c. 4,110,000, w.b.c. 8,800, hemoglobin 77 per cent, color index -0.9, lymphocytes 35 per cent, polymorphonuclears 65 per cent (filament 60, nonfilament 5). An x-ray plate of the chest revealed no active tuberculosis.

Mental Status—The patient was neat and tidy. He complained of abdominal pain. There was no defect in the stream of mental activity, but he appeared depressed, anxious, and worried. The trend concerned his physical condition and did not include hallucinations, delusions, or other unusual mental phenomena. His sensorium was intact. The outstanding features of his mental illness were his pronounced depression and the previously attempted suicide. An organic psychosis on a syphilitic basis could not be proved, and the diagnosis was accordingly "reactive depression."

His course in the hospital was characterized by tabetic crises at intervals of several weeks, in spite of bismuth and malarial therapy. The use of arsenic in the form of trypanamide could not be continued because of idiosyncrasy. It was thus necessary to resort to symptomatic treatment of the crises. The latter involved the rectum, stomach, and intestines. There were also severe pains in the lower extremities and encircling the chest. Morphine by hypodermic injection relieved the pain but was seldom used for fear of producing addiction. The usual sedatives were unsatisfactory. Magnesium sulfate, intra-

This patient appeared in good condition immediately after the resumption of cardiac activity. The blood pressure was up, the color was bright pink, and the pulse was slow and forceful, yet he had already suffered irreparable brain damage as evidenced by the mild convulsive movements and the abnormal character of the respiration after it finally resumed.

The time element is, therefore, all-important in making this decision. It should be done, certainly, within five minutes or will probably ultimately fail, whatever its temporary effect.

Use of an Analeptic Drug—During respiratory arrest, the last thought and not the first should be the use of analeptics. The suspension of respiration alone, when not accompanied by cardiac impairment, is of little significance provided intelligent artificial respiration is maintained. After a certain period of artificial respiration with oxygen and without the resumption of spontaneous respiration, low percentages of carbon dioxide-oxygen should then be tried. If this produces no effect, it is then reasonable to try one of the analeptics.

In this instance, an immediate resumption of spontaneous respiration of an abnormal character occurred which, in all probability, was due to the effect of the drug, as the previous means had been tried deliberately and over a period of some forty-five minutes.

A less favorable effect would be anticipated had early reliance been placed on the analeptic to the neglect of adequate artificial respiration and had the drug been injected while tissue oxygen tension was below normal.

The effect of analeptics on the impaired heart when given for the treatment of suspended respiration must be considered, even though some of the analeptics are given as medical treatment for cardiac disease. The effect for good of these drugs on the heart is seriously questioned in reported experimental and practical experience.

Summary

A case of cardiac arrest of unusual duration occurring under anesthesia is reported and the treatment discussed.

THE FORMATION OF AN ARTIFICIAL VAGINA WITHOUT OPERATION (INTUBATION METHOD)

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IN JUNE, 1938, I reported on a new technic for relieving the malformation of absence of vagina without operation.¹ The report was based on 6 cases, some of them observed more than three and one-half years. Since then I have had the opportunity of treating 2 more patients and to follow the progress of 4 of the earlier ones. The procedure is so simple, so effective, and the result so uniformly successful that it should entirely supersede operative measures, some of which entail serious dangers and all of which require prolonged hospitalization. The self-intubation method is an office procedure for instruction but mainly "homework" on the part of the patient, as a facetious colleague terms it.

The entire armamentarium consists of three test tubes, preferably pyrex (if not pyrex, at least thick-walled glass), respectively, about $\frac{5}{16}$, $\frac{3}{8}$, and $\frac{1}{2}$ inch in diameter and, for the larger two, 6 inches in length.

No change has been made in the technic, except that one-half hour use, twice a day, has been found sufficient. I no longer require the patient to keep the tube inserted throughout the night, as first advised.

At present I direct the patient to appear once each week for the first month in order to make sure that directions are properly carried out and to supervise progress. For the next two months she presents herself every second week. By that time a permanent vagina is established. At each visit the patient introduces the tube in my presence in order to show that the direction of application and the amount of pressure used is correct. The mucosa of the new canal must be light pink, intact, and without fissures. This can be readily ascertained by looking through the tube in situ.

Of the 8 patients, two have not been traced. These 2 had been married happily for three and one-half years in 1938. The following 6 cases from my private practice, are reported in detail.

Case Reports

Case 1—L. R., has now been married one and one-quarter years, and her husband informed of her condition. Coitus, two to three times weekly, was satisfactory to both partners. The vagina admitted two fingers, depth $2\frac{7}{8}$ inches without pressure, when examined on December 21, 1939.

Case 2—S. G., has been married four and one-half years, with her husband uninformed about

The cornea was dry and lusterless, with pupils three-quarters dilated.

Artificial respiration with oxygen was given continuously without difficulty. A pharyngeal airway was in place. Fifteen minims of $\frac{1}{1000}$ epinephrine was given subcutaneously and 25 minims intracardially. No pulse was present or heart sounds audible during almost continuous observations. After five minutes cardiac massage through an extra incision was considered but held in abeyance. External cardiac massage was attempted without success.

Fifteen minutes after the pulse beat had ceased, a left upper rectus incision was made and the heart was massaged. After compressing the heart four times, response suddenly occurred. A forceful heart beat and pulse returned, and the color changed to a bright pink. The pulse rate was eighty, blood pressure was 64/40 on the first reading and 140/80 within a few seconds. No attempt to breathe was made.

Respiration—The patient did not breathe spontaneously for sixty minutes. During the first forty minutes (including fifteen minutes before the heart resumed) artificial respiration with oxygen was carried out, with care taken to avoid hyperventilation. Five per cent carbon dioxide in oxygen was then used for twenty minutes without effect. At the end of this time, $4\frac{1}{2}$ cc of coramine was injected slowly, intravenously. This produced a deep gasping inspiration which was followed by another in some thirty seconds. Thereafter, regular respiration continued but was abnormal. It was slow (about ten) but was very forceful and showed a flutter at the end of each deep inspiration.

Course—The patient was returned to the ward and given oxygen continuously through an insufflation airway.

Shortly afterward, slight convulsive movements of the extremities occurred. The abnormal type of respiration continued. A very faint corneal reflex was present at first, this disappeared after four hours. His blood pressure continued at 140/70 to 120/60 throughout the day, and his color remained good for about ten hours.

Then his condition gradually became worse, and death occurred twenty-two hours after onset, with terminal temperature of $107\frac{1}{4}$ ° F and a pulmonary edema.

Autopsy showed severe cirrhosis of the liver and congestion of both lower lobes of the lungs. The heart appeared normal.

Comment

This case raised and answered, partially or completely, many questions in the minds of those who observed it.

The Cause of Cardiac Arrest—When the heart stops early in the operation and in light anesthesia, the diagnosis is fairly certain to be ventricular fibrillation. The other important cause of cardiac arrest under anesthesia is dilatation and failure from toxic overdosage of the anesthetic.

Ventricular fibrillation, occurring in light anesthesia, is aided by a prolonged second stage of anesthesia such as often accompanies the induction of alcoholic patients. The vascular sys-

tem is flooded with epinephrine of the individual's own manufacture as a result both of stimulation from excitement and from the effect of the ether. Further massive afferent stimulation, resulting from the incision, reflexly enhances the hyperexcitability of the cardiac muscle and sets the stage for ventricular fibrillation.

Value of Epinephrine—Following the sudden suspension of cardiac activity from any cause, epinephrine is almost universally used immediately. The value of this procedure in an anesthesia emergency occurring while the anesthesia is known to be light is seriously to be questioned. In all probability, an increased output of the patient's own epinephrine has caused the condition. The only value to be expected from cardiac injection should come from the needle prick itself. This causes a direct focus of stimulation in the heart which might possibly interrupt the fibrillation. There is no purpose in further enhancing the excitability of the heart muscle.

On the other hand, the value of epinephrine when the heart has failed because of dilatation from toxic overdosage is well established.

Cardiac Massage—When cardiac arrest occurs under anesthesia and an abdominal operation had not been planned, the responsibility of an important decision is placed squarely upon the surgeon and the anesthetist. After attempts at external cardiac massage have failed, should the abdomen be opened to facilitate cardiac massage? Many doubts arise immediately: (1) The heart may recover at any second, (2) the responsibility for an unauthorized operation has to be assumed, (3) a severe infection may develop, should recovery occur, through performing a hurried laparotomy without adequate preparation, and (4) the probability that no good effect will be produced weighs heavily.

All these doubts loom large if the situation has not been faced previously. For those who saw this case, any future decision will be easier. Massage produced immediate resumption of the heart beat after fifteen minutes of silence.

The possibility of maintaining a temporary minimal artificial circulation by cardiac massage is not too incredible. Should the heart not resume immediately, the hope of maintaining an attenuated line of oxygen supply from the high oxygen level in the lung, resulting from artificial respiration, to the vulnerable brain cell should be considered. It should be remembered that only the highly developed brain cells are vulnerable during this period. Other cells in the body can withstand oxygen deprivation for long periods. Even the smallest amount of oxygenated blood propelled to the brain might prolong the life of these cells until the heart resumed its beat.

carried on a stretcher and kept in a horizontal position. Nevertheless, two weeks later, after half a dozen successful insufflations, he was taken as usual to the x-ray department, and, while stepping from the stretcher to the fluoroscope, he became cyanotic and collapsed. Respiration ceased and the heart beat was not audible. Following oxygen inhalations, intravenous coramine, and intracardial epinephrine injections, he rallied but expired in twenty minutes in a syncopal attack.

Air embolism and pleural shock are still a problem, and need further study. The difficulty in proving fatalities from air embolism lies in the fact that in animal experiments the intrapulmonary insufflations are innocuous. Pleural shock, which French authors call "pleural eclampsia," unquestionably does occur. Pleural shock has been observed in oleothorax using highly concentrated gomenol. It has also been observed in simple pleural lavage, pleural tap, and pleural exploration.

The symptomatology is identical in both air embolism and pleural eclampsia, but because of the predominance of one symptom or another, accidents might be considered purely syncopal, paralytic, or epileptiform. For instance, a sudden collapse of the heart accompanied by pallor, weak pulse, slow respiratory rate, and unconsciousness is purely syncopal. In extreme cases death occurs in a short time. Sometimes this syncopal syndrome is preceded by convulsions and intellectual aura resembling jacksonian epilepsy. The spasm may be present only in the muscles of the face but occasionally are generalized as clonic convulsions. In serious cases they lead to paralysis, which may be monoplegic, hemiplegic, but never paraplegic. This paralysis disappears early in benign cases. In severe cases the paralysis remains for weeks and disappears slowly. Fatalities are known in these extreme cases of paralysis which closely resemble cases of cerebral softening due to a hemorrhagic focus.

Ocular complications such as hemianopia, amblyopia, and even amaurosis, persisting for many days have been observed.

Poix and Renier¹ claim that it is impossible to foresee the evolution of a syndrome when it appears. It may recede in a few minutes or may lead to death. In other cases it leaves lasting and definite changes.

This concept of air embolism is criticized by many physicians who claim that in compound fractures, accidental perforation of veins, trauma of the uterine sinus, and the accidental intravenous injection of air bubbles fatalities from air embolism do not occur.

On the other hand, Poix and Renier and other writers^{2,3} claim that only air embolism could produce such severe changes. One should be

present at such a dramatic episode in order to realize how quickly death occurs. After having observed only one fatality, it is easy to accept the fatality of air embolism as the cause of death. To further substantiate this belief, it was observed that, in cases of sudden death, in postmortem examinations air bubbles have been seen in the cerebral and coronary arteries. If the postmortem examination is for some reason delayed, the air bubbles may be absorbed.

Liebermeister's¹⁰ phenomenon, as clinical symptom in air embolism, may be valuable in the diagnosis of air embolism. Patients complain of numbness of the tip of the tongue. In such cases an air bubble reaches the pulmonary veins, then the left heart, the aorta, and carotids. From there it passes to the lingual artery before it reaches the brain. This would explain the numbness of the tongue. Unfortunately, in severe cases there is no time to investigate whether the patient feels such a numbness.

If the air bubble reaches the cerebral arteries, ischemia and softening of the corresponding part of the brain occur. In mild cases this results in convulsions, paralysis, or occasionally in death. Small air bubbles reaching the vena cava, right side of the heart, and right lung may be absorbed by the pulmonary capillaries. If large, they may cause death.

Pleural shock is usually nervous or psychic in origin. According to Poix and Renier it may occur in patients even when the trocar does not reach the visceral pleura and before any air is insufflated. However, the clinical course and fate of patients suffering pleural shock and those experiencing air embolism are identical. An angiomatous parietal pleura as a result of previous inflammation may be responsible for pleural shock. This basis was suggested by Forlanini⁴ and seen by Montanini.⁵ Going one step further, we may believe that the shock is really an unrecognized embolism. However, in our opinion as in others, definite proof of this is still lacking.

There are many other less serious accidents that may produce a delayed death. Subcutaneous emphysema, as a result of perforation of the parietal pleura, visceral pleura, and subcutaneous tissue of the lung, may result in an enormous amount of air in the subcutaneous tissue, producing a tension emphysema. If the perforation is not treated surgically, it may terminate fatally. In the majority of cases a subcutaneous emphysema produced by perforation of the parietal pleura is benign and disappears in a few days. Perforation of intercostal vessels may produce a subcutaneous emphysema or hemorrhagic pleurisy. This is never fatal. The sharp point of a

her condition. She was first seen one year after marriage, and there was no coitus then or since, this couple live platonically. *The vagina was established by intubation in April, 1937. There has been neither coitus nor intubation since then.* She was examined December 22, 1939, when there was revealed an easy two-finger vagina, the tube entered $3\frac{1}{8}$ inches, and the mucosa was pink, soft, and resilient. Abstinence was apparently due to psychic not physical reasons. She was unintelligent.

Case 3—A H., unmarried, had the vagina established by intubation by May, 1937. *She has been neglecting intubation since April, 1938.* Examination on December 22, 1939, revealed a two-finger vagina (tight canal), and the tube readily entered 3 inches.

Case 4—L K., unmarried, had the vagina established by intubation in January, 1938. She "inserted tube at intervals," and actually has been neglectful. An examination on December 18, 1939, showed a two-finger vagina with the tube entering $3\frac{1}{2}$ inches. (Measurements are always taken from urethral meatus to the end of the tube.) She was to be married in one week and refused to enlighten her future husband in spite of my insistence.

Case 5—S W. was unmarried, and intubation was begun November, 1938, and was completed March, 1939. Examination on December 23, 1939, revealed a two-finger vagina with the tube entering $3\frac{1}{8}$ inches. She uses the tube three times a week, and on introduction she notices a spasm which disappears in one-half minute. This same spasm was noted by me on examination (levator spasm).

Case 6—D R. was seen at the age of $16\frac{1}{2}$ years, six years ago. She was advised to wait. She was again seen in November, 1939. She was then engaged, and her fiancé knew her condition. The couple had a personal interview

with me. Between November 25 and December 30, 1939, a 2-inch depth was obtained by intubation. At first the hymen proved an obstacle to the $\frac{3}{4}$ -inch tube. She is to continue intubation and will be married soon.

On the basis of these 8 cases (2 reported elsewhere not followed), I feel justified in urging that the establishment of a vagina by operative means, where this organ is congenitally absent, should be entirely abandoned. The intubation method should supersede operative treatment, as it appears successful in all cases so far attempted—even in the case which, in my first report, I classified as a failure, because re-examination shows the presence of an adequate vagina.*

Experience has likewise shown that when a vagina has been established by means of the intubation method, the result is permanent, even in patients who have neglected dilatation for more than a year. It, therefore, appears justifiable to make a vagina at about the age of 18 years, even if the patient is not engaged to be married, because the psychic effect on such a handicapped individual is good, re-establishing a feeling of normalcy and abolishing the consequent psychic disturbances due to a feeling of deprivation and inferiority.

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* In a recent patient, aged 31, a vagina was established in six weeks.

SUDDEN AND DELAYED DEATH FOLLOWING PNEUMOTHORAX PROCEDURES

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PNEMOTHORAX treatments are becoming more and more an office procedure and, therefore, an enumeration of its dangers is timely. However, it is sometimes impossible to avoid accidents in pneumothorax procedures, even with the best technique.

Sudden and delayed deaths are caused by (1) cardiac failure, (2) air embolism, (3) pleural shock, (4) miscellaneous causes.

Cardiac Failure—This rarely happens. The following is a report of a typical case.

Case Report

A man, aged 49, was seen with an exudative-productive tuberculous lesion over the entire right lung. His sputum showed many acid-fast bacilli. He had been sick more than two years

and, for treatment, had been advised to go to a farm for a rest. His sputum had never been previously examined, and none of the consulting practitioners had suggested pneumothorax. In consequence, his general condition was bad, he had secondary anemia, tachycardia, arterial hypotension, and cardiovascular insufficiency. Fever, night sweats, anorexia, and streaking had been present for a long time. As a last resort pneumothorax was advised, but his family was informed that at his age and his condition this procedure was hazardous.

Right after a few pneumothorax insufflations his fever diminished and his appetite and general condition improved. The pneumothorax collapsed very carefully with a very satisfactory collapse, except for an adhesion at the extreme upper lobe. Due to his cardiac condition, he was not permitted bath and toilet privileges. Even when he went to the fluoroscopy room, he was



FIG 1

they should be trimmed so as to conform to the proper configuration of the nose. The operation is usually performed under local anesthesia consisting of 2 per cent novocain with 20 drops of epinephrine to the ounce.

Reports of Two Cases

Case 1—A well-developed and well-nourished white man, aged 77, was referred to the Plastic Surgery Clinic at St. Joseph's Hospital by Dr. D. DeLorenzo. The patient stated that he had noticed a gradual but progressive enlargement of his nose over a period of 20 years. He was seeking relief because his breathing was becoming greatly impaired. His wife stated that he was an excessive beer drinker all his life.

Examination revealed several large, irregular, lobulated masses attached to the nose, two of which were about the size of a small lemon. The operation was performed under local anesthesia and the masses were completely removed. Recovery was uneventful. The pathologic report of the Bureau of Laboratories, Yonkers N. Y., was as follows:

"Macroscopic Eight pieces of skin-covered tissue all more or less lobular, the surface greatly scarred, soft, red, the cut surfaces pinkish-yellow.

"Microscopic Marked hypertrophy of corium with edema and cellular infiltration, also dilatation of the sebaceous glands. The cellular infiltration of the corium is general, consisting mostly of lymphocytes and endothelial leukocytes, with indefinite focal accentuation and occasional groups of foreign body giant cells. The epidermis is thrown into coarse folds and often shows subepithelial lymphoid infiltration.

"Diagnosis Chronic hypertrophic rhinitis (rhinophyma)."

Case 2—A well-developed and well-nourished white man, aged 55, stated that he drank beer excessively. He stated that he first noticed a tumefaction of the nose about twenty years before which had become progressively worse. The family history was essentially negative.



FIG 2



FIG 3

Examination revealed three lobulated masses of soft tissue involving the entire lower half of the nose. Complete physical examination was otherwise negative.

The operation was performed under local anesthesia consisting of 2 per cent novocain and 20 drops of epinephrine to the ounce. The masses were completely excised down to the

trocar may cause an erosion of a rib. This is extremely rare and without danger.

Lung perforations occur very frequently, and the only ill effect is slight pain in the chest and streaking for a few days. Perforation of an adhesion that has common capillaries with the lung may cause serious damage. Such perforation due to a Jacobaeus operation caused death by producing profuse bleeding. I have witnessed this in 1 case.

However, all these accidents are rare. In a review of 229,000 cases in different sanatoriums in Switzerland, Fromel and Demol⁶ found only 69 accidents or 1/5,000. Out of these 69 accidents 6 were fatal, 52 per cent occurred before insufflation, 29 per cent at the time of insufflation, and 19 per cent after insufflation.

The author had 1 death in 3,900 pneumothoraces. It was due to cardiac failure and is described above. A nervous shock occurred in another case in a neurotic patient following the subcutaneous injection of 2 per cent novocain-

epinephrine solution preparatory to a pleural tap.

Most all of the accidents in pneumothorax procedures may be avoided by proper examination and choice of cases, careful study of the roentgenograms, complete heart studies, the use of oxygen for the first insufflation in difficult cases, careful manometric readings, proper instruments, and maintenance of a simple congenial atmosphere during the operation, especially in initial pneumothorax.

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RHINOPHYMA

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RHINOPHYMA is a grotesque hypertrophy of the nose. It is the end result of a previous acne rosacea and is described under a variety of names. Some of the names by which it is known are "whisky or rum nose, acne hyperplastica, hammer nose, double nose, fatty nose, growing nose, fibroma molluscum, and cystadenofibroma of the nose."

The causative agent is unknown. Some believe that beer and whisky are the responsible causes, although the disease has been observed in total abstainers. Other factors that are usually attributed to it are exposure to extreme cold or heat, constipation, excessive imbibition of tea or coffee, and excessive eating. However, these explanations are not accepted by the majority of the medical men.

The disease usually involves the lower two-thirds of the nose and only rarely invades the alar rim, the chin, and the forehead. The first manifestations of this condition usually appear after the fiftieth year, and men are more disposed to it than women, the proportion being approximately twelve to one. While women are more prone to acne rosacea than men, the ratio being three to one, nevertheless they rarely develop rhinophyma.

In acne rosacea there is a passive hyperemia of

the nose and flush areas of the face. This persistent hyperemia causes a permanent dilatation of the capillaries, and the elastic tissues in the walls of the blood vessels become absorbed. This overnourishment of the nose stimulates the proliferation of new blood vessels and connective tissues and also causes the hypertrophy of the sebaceous glands which finally become lobulated. It is at this stage that rhinophyma actually begins. The openings or pores of the sebaceous glands become greatly enlarged, and great masses of sebum are excreted. Often, the sebum is retained because of the excessive edema pressing against its excretory canal. These factors, in turn, cause an irritation to the surrounding tissues and the formation of an inflammatory exudate which consists of lymphoid cells, mast cells, plasma cells, epithelioid cells, and, sometimes, giant cells. The edema of the tissues may become so excessive as to block completely the nourishment to some parts, thereby causing a necrosis. Carcinomatous degeneration is rarely found in conjunction with rhinophyma.

Many methods have been advocated for the treatment of this condition. The most simple and perhaps most practical procedure is to pare off the excessive skin down to the basal epithelial sinus line. If the cartilages are involved,

Medical Preparedness

THE PLACE OF THE CIVILIAN PHYSICIAN IN THE EXPANSION OF THE UNITED STATES ARMY

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THE army of the United States exists only in skeleton form in times of peace. Before the recent enlistment drives, the strength of the regular army was about 180,000 officers and men. On April 20, 1940, there were only 1,171 officers in the medical corps of the regular army. On the same date there were approximately 15,000 officers in the medical reserve corps.

We are now engaged in increasing the regular army to a strength of 375,000 and the national guard to about the same figure. In addition, beginning this month, October, 1940, and at certain intervals thereafter, according to present legislation, we shall draft increments of 400,000 men at a time. These men will constitute the third great component of the United States Army, namely, the organized reserves. According to the normal proportion of 1.2 per cent medical officers to total troops, each such draft will require 4,800 additional medical officers. It thus becomes obvious that if the present world conditions and national policies continue, the existing medical reserve corps will soon be called to active duty and a great many able-bodied civilian physicians will be giving serious consideration to the subject of military service. Furthermore, the intelligent medical layman will quickly realize that it takes more than a medical education and professional skill to be an army surgeon, and he may well ask just what constitutes the new duties he may soon be called upon to perform.

The mission of the medical department has been briefly stated as the preservation of the strength of the military forces and the conversion of casualties into replacements. To carry out this assignment, however, a great multiplicity of functions is involved. According to Army Regulations (A.R. 40-5) these include

1 The conduct of physical examinations of applicants for admission to, and members of the army

2 The preservation of health and the prevention of disease among personnel subject to military control including the direction and execution of measures of public health among the inhabitants of occupied territory

3 The medical, surgical, and dental care of sick and wounded personnel, with a view to restoring to duty at the earliest practicable moment those not permanently disabled, and to removing from active service those whose disabilities render them physically unfit for further military service

4 The methodical disposition of the sick and wounded so as to insure retention of effectives and to relieve the fighting forces of the non-effectives.

5 The transportation of the sick and wounded

6 The administration of military hospitals and other prescribed establishments for the care, treatment, and transportation of sick and wounded personnel and animals

7 The preparation and proper disposition of records and reports pertaining to activities of the medical department.

8 The proper selection, classification, and training of medical department personnel.

9 The operation of a veterinary service including the preservation of the health of animals and their care when disabled, also the inspection of meats, meat foods, and dairy products

10 The production, procurement, storage, and issue of all supplies and equipment used by the medical department.

11 The research and experimentation connected with the development and improvement of medical department materiel, equipment, and supplies

12 The preparation and preservation of photographic and cinematographic records pertaining to activities of the medical department

There is still another function of the medical department not specifically mentioned in the above listing, but which should be included to

TABLE 1—EVACUATION HOSPITAL NUMBER 1
First Army Maneuvers

	1939 (2 wks.)	1940 (3 wks.)
Medical diagnoses	221	557
Surgical diagnoses	122	307
Counted twice or more	3	64
Total admissions	340	800



FIG 4



FIG 6



FIG 5

epithelial sinus Recovery was uneventful All dressings were removed at the end of the second week. The "after" pictures were taken two months postoperatively The pathologic report of the Bureau of Laboratories, was

"Macroscopic Strip of white skin 6 by 3.2 by about 0.6 cm, the surface much scarred The consistency is tough Cut surfaces show translucent areas alternating with dense yellowish areas

"Microscopic The skin is of irregular thickness, showing hyperkeratosis in some areas and regularly in the deep fissures which are present Some of these fissures form flasklike cysts filled with desquamated cells, and occasionally these cysts are widely distended by purulent exudate There is notable hypertrophy of the sebaceous glands and some of these are transformed into cysts The interstitial tissue shows scarring and infiltration by many lymphoid cells including plasma cells and by endothelial leukocytes which are, in places, filled with granules of yellowish pigment Small abscesses also occur

"Diagnosis Rhinophyma."

TABLE 4.—FIRST ARMY MANEUVERS, 1940

Alimentary Diseases	Cases
Gastroenteritis (25 of these observed for appendicitis and 1 each for peptic ulcer nephrolithiasis, and sigmoiditis)	171
Enterocolitis (1 observed for appendicitis, 1 for cardiac)	112
Dysentery (clinical 33, laboratory 7)	40
Constipation	13
Hemorrhoids	6
Gastritis	3
Parotitis (1 epidemic)	2
Ulcer (1 duodenal 1 marginal)	2
Observation for enterocolitis	1
	350

domg he will receive, when he graduates, a commission as First Lieutenant in the Medical Reserve Corps at the same time as he receives his diploma as a physician. This is by far the best way to enter the military establishment for it puts him in line for immediate active duty on graduation and for regular promotion.

Let us now consider the case of the recent graduate who is not already a member of the reserve corps. In order to join the service he must be a United States citizen, pass a physical examination, hold a degree from a Class A medical school, and possess a state license to practice. However, if he is a graduate of less than one year's duration the state license requirement may be waived. If the applicant is willing to accept immediate assignment to extended active duty for a year or more, a commission will be granted him on his presentation of letters of recommendation from three responsible citizens, as well as a letter from the dean of his medical school. The application for a commission should be made to the commanding general of the corps area in which the applicant resides.

Active duty will be performed as already described either at general hospitals, station hospitals, or with tactical units, and will embrace all fields of general and specialized medicine and surgery. The opportunity to work with both regular army and reserve specialists should be noted. Also excellent postgraduate training is obtainable in connection with aviation medicine. After serving six months of active duty in the continental United States, a reserve officer may request duty in Hawaii, Panama, or other United States territories and possessions. Pay is according to rank. A first lieutenant without dependents receives \$2,696, with dependents \$3,152. Each officer must supply his own uniform and pay for his mess, but he receives shelter and liberal reimbursement for travel while under orders. As he earns promotion the pay increases with each grade, that of a captain, for example, without dependents being \$3,450, and \$3,905 with dependents.

TABLE 5.—FIRST ARMY MANEUVERS, 1940

Surgical Service	Cases
Fractures, dislocations	46
Cellulitis abscess, carbuncle, furuncle, blister	35
Sprain, strain synovitis	27
Contusion	26
Wounds (lacerated or abraded 9, punctured or incised, gunshot wound 4)	20
Hernia (1 operation)	8
Burn	6
Osteomyelitis	5
Concussion (brain)	5
Pilonidal cyst	4
Appendicitis (3 operations)	4
Urethritis (nonvenereal)	4
Osteomyelitis, intestinal obstruction (observation), nephrolithiasis (observation), bite, insect, lymphadenitis (3 each)	15
Pes planus, amputation, traumatic hydrocele, urine retention testes undescended, bite, snake, toenail ingrown osteoma (1 each)	8
	213

Older graduates, but still young enough to fall into the draft age groups, wherever the limit may be set by present or subsequent legislation, will undoubtedly be able to secure commissions on application. Such application should take the form of a letter to their corps area commander stating their desire and including such essential information as their school and year of graduation, specialty or special training if any, number of dependents if any, and whether the candidate is immediately available. Such a letter should be written early and in any event no later than the date on which the selective service legislation goes into effect. Otherwise the physician is likely to find himself drafted as a private soldier and he will remain in this grade until his commission comes through. Being a private is an unnecessary waste of professional skill, since in the army no physician can function as such without a commission. A relatively small number of officers under 35 may fit into the personnel of the newly organized military hospitals 'affiliated' with certain selected civilian institutions. Commissions for these individuals will presumably be secured for them through their own hospital commanders.

Those patriotic physicians who are beyond the draft age but are still physically fit and anxious for military duty will be utilized either as senior officers in the "affiliated" army hospitals above described, or as medical officers elsewhere in the enlarged medical establishment as soon as the need for their services arises. Those with specialist ratings will undoubtedly be used as such. All will presumably be offered commissions in grades proportionate to their value to the army.

So much for the participation of civilian doctors by actual enrollment in the armed forces. Those who cannot for one reason or another do this may still help by volunteering their services on a part-time basis by assisting the operation

TABLE 2—FIRST ARMY MANEUVERS, 1939

Medical Service		Surgical Service	
Alimentary	75 (25 obs. for app.)	Contusion	29
Respiratory	56 (3 pn, 15 grippe)	Fracture-dislocation	25
Genitourinary	25 (23 venereal)	Sprain, strain	18
Tegumentary	23 (13 poison ivy)	Cellulitis	12
Eye	12 (9 conjunctivitis)	Laceration	11
Neuropsychiatric	10 (5 psychosis)	Appendicitis, operation	4
Ear	5	Abscess, peritroctic	3
Cardiovascular	4	Miscellaneous*	20
Miscellaneous	11		122
	221		

* Includes 1 case of perforated duodenal ulcer

make the picture complete. This function is known technically as *command*. By command in this sense is meant the administrative responsibility on the part of higher authority for a soldier, as a soldier, no matter what branch of the service he is in. This responsibility includes the basic obligations of feeding, clothing, shelter, pay, assignment or return to duty, and all such matters. Medical officers are charged with command function not only over their own troops, who constitute 10.5 per cent of the total personnel of the army, but also over all troops who may come under their control as casualties and thus temporarily lose contact with their own proper commanders. These "lost sheep" may in a major emergency, as actually happened in the American Expeditionary Force during the last World War, reach 15 per cent of the strength of the forces engaged. Therefore, it may come to pass that the medical department may actually have to assume complete charge of as much as one-quarter of the entire army.

Returning now to the more professional responsibilities listed above, it is obvious that some of the duties concern dentists and veterinarians rather than medical doctors. However, it should be clear to any thinking civilian physician that he cannot, without special preparation, assume even the most familiar activities in their new and strange military setting. For the efficient execution of these duties he would require additional training just as he would upon entering the practice of any new civilian medical specialty.

The more purely tactical, administrative, and supply duties would naturally be assigned to regular army officers or to reservists of relatively considerable experience. The great demand at first is for young active men who are willing to start at the beginning. The beginner in military medicine would probably be given the more purely professional assignments. He almost certainly would be expected to assist in the per-

TABLE 3—FIRST ARMY MANEUVERS, 1940

Medical Service		Surgical Service	
Alimentary	350	Surgical proper	213
Respiratory	130	Veneral	44
Tegumentary	27	Ear cases	21
Neuropsychiatric	24	Eye cases	19
Miscellaneous*	18	Dental	10
Skeletal	3		307
Cardiovascular	2		
Urinary	2		
Lymphatic	1		
	557		

* Includes 1 fatal case of meningitis, cerebrospinal.

formance of physical examinations and he might be ordered to serve with troops or in hospitals under the direction of senior officers. The casualties that would be encountered during the early phases of mobilization would be predominantly medical in nature. There would be a few injuries and surgical diseases, of course, but these would not much exceed their incidence in civil practice. The heavy need for surgical skill and training would not be felt until the actual shock of war had created its battle and bombardment casualties.

During these early stages of army expansion, namely those of mobilization and troop concentration, the army physician would be especially busy with the prevention and treatment of epidemic diseases. In the summer and in the warmer regions, diarrhea and dysenteries would probably prevail, whereas during the winter and in the colder places respiratory affections would constitute most of the casualties. At all times the specific epidemic diseases of youth and childhood, measles, mumps, diphtheria, meningitis, would tax the energies of the medical officer.

In order to illustrate the types of cases encountered in actual practice in army hospitals, the following personal experience tables may be presented. These tables illustrate the types of cases admitted to the Evacuation Hospitals serving the First Army during the maneuvers of 1939 and 1940 held in northern New York (see tables).

It should again be stressed that these are cited as being illustrative experiences. One may encounter a great variety of diseases or injuries during mobilization and warfare. The type of casualty will depend on the season, geographic location, presence of epidemics, type of weapons used (whether rifle, high explosives, gas), and on many other factors.

Assuming then that a civilian physician desires to enter military service, how does he go about it? First, however, let us say a word concerning the undergraduate. If he is lucky enough to be studying in an institution containing an R.O.T.C. (Reserve Officers' Training Corps) unit, by all means let him join this organization. By so

bers of the association should function more effectively.

Third, dietitians may contribute their services in the preparation of educational material concerning nutrition problems—for example, the planning of low-cost diets.

Fourth, dietitians who write for lay publications can advocate a sound nutrition program in the community. They can also advise the lay public in the utilization of surplus farm products. They can help to plan adequate school lunches through the written word in lay publications and the spoken word over the radio, dietitians can help toward building a sound nutrition program which is essential in a preparedness program.

Fifth, dietitians can enroll with the American

Red Cross for service in Army hospitals, cantonments, and disaster relief. Since dietitians who are married are ineligible for Army duty, they may be expected to replace dietitians eligible for Army service who are now employed in civil hospitals.

Yes, dietitians can take an active role in the defense program, and they are prepared to do their part.

In summary, the more than 4,500 members of the American Dietetic Association are ready to help in the defense program. To this end all dietitians whether employed or not will be registered for available service as nutrition consultants, speakers, or writers, and for service in Army hospitals, cantonments, and disaster relief.

IS IT CRIMINAL TO SAVE?

(Monthly Editorial Prepared by the Medical Advisory Committee of the Minnesota State Medical Association)

Vital statistics show that a remarkable change in death rate in most diseases is taking place in this country and that consequently the span of life is increasing. Certainly this can be credited in great part to the type of medicine that is being practiced by our profession.

From hospital statistics, no less noticeable is the fact that fewer and fewer amputations are being performed in the cases of badly injured extremities. To those men who have practiced for a quarter of a century or more, the picture of the amputating knife is a familiar one, the painful stump, a "bugbear", and the artificial leg or arm, a commonplace.

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Yet the medical man who not only saves the life of the patient but also gives him a good leg to use may be subjected to a malpractice suit because he could not again reproduce *in toto* the anatomic relations which prevailed before the accident. Why men who do remarkable restorations in these cases should be exposed to any criminal might, to court ridicule is beyond the comprehension of your Medical Advisory Committee.

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of the Selective Service Act Appointment to such positions is usually made on the recommendation of the local, county, or state medical society In describing this important contribution to army expansion, one can do no better than to read the article by Lt Colonel Charles B Sprunt, a regular army medical officer, assigned to the General Staff Corps, who was appointed medical adviser to the Joint Army and Navy Selective Service Committee This article on "Medical Participation in Selective Service" appeared in the *Journal of the American Medical Association*, September 29, 1940

In concluding this brief picture of the civilian doctor's contribution to army expansion, may I address a word particularly to those about to

enter the military service. The sacrifice of a going practice, or even of good prospects for beginning private practice, is no small matter as every physician, both in and out of the army, can readily appreciate However, there are some very real compensations that always accompany active military service, and these may well be borne in mind by those directly concerned Among these are the development of new and lasting friendships, the acquisition of specialized skills and experience, the improvement in physical vigor and the development of personal resourcefulness, and last, but by no means least, the sense of abiding satisfaction in having contributed a bit, no matter how modest, to the defense of one's country in time of need

Ideal Organization for Catastrophe Squad

THE Bellevue Catastrophe Squad is taken as a model, and the Medical Preparedness Committee hopes that all communities will organize such Squads along the same lines and notify it of such organization.

Organization—The Squad consists of a group of 12 graduate nurses plus a nurse as captain, and 12 interns plus an intern as captain. Thus, each Squad consists of 26 members

Ambulances—One emergency ambulance and an ambulance-bus The emergency ambulance serves to transport those who need hospitalization from the scene of disaster to the hospital The large bus (ambulance) seating 26 persons also carries all equipment

Equipment and Supplies—(a) Two large wooden boxes ($3' \times 2' \times 2'$), each containing drums with sterile supplies and medications (instruments, gauze, bandages, narcotics, iodine, alcohol, etc.) (b) One large wooden box ($3' \times 2' \times 2'$), with all sorts of splints and bandages

necessary for the treatment of fractures (c) A small box containing many syringes and T.A.T vials (d) Two canvas bags containing blankets, which are spread on the ground and upon which patients are treated.

Duties—As a rule, nurses and doctors group themselves into teams of two, etc.

The captains supervise the work of the Squad. The nurse in charge of the Emergency Ward has the responsibility of seeing that all boxes are adequately supplied and ready for immediate use. Everything is checked upon return from a call. In any event, all material is re-sterilized once every month.

General—The Squad responds to any major disaster occurring anywhere in the locality of its establishment. All calls for the Catastrophe Squad come to it from the local police headquarters

SAMUEL J KOPETZKY, M.D, Chairman
Committee on Medical Preparedness

Dietitians in a National Defense Program

WHAT role will dietitians play in the national defense program? At the recent twenty-third annual convention of the American Dietetic Association in New York, the Defense Council, under the chairmanship of Mary I Barber, who is also president of the association, reported their recommendations

The members of the Defense Council for the American Dietetic Association are Lenna F Cooper, Montefiore Hospital, New York, Nell Clausen, Children's Hospital, Milwaukee, Alma Bering, Sheppard and Enoch Pratt Hospital, Towson, Maryland, Laura Comstock, Eastman Kodak Company, Rochester, and Mary I Barber, Kellogg Company, Battle Creek The Defense Council is working closely with the Executive Board of the American Dietetic Association in formulating a preparedness program

One of the first objectives in the American Dietetic Association defense program is to make a survey of all dietitians in the various affiliated state dietetic associations who are willing to serve in certain capacities in the defense program

The roster will include not only actively employed members but also dietitians who are temporarily inactive including those who have married Each member so enrolled will be asked to state whether she can serve in a permanent or emergency position

What will these registered dietitians do in the defense program?

First, they may act as nutrition consultants to welfare agencies, to state and local nutrition councils, or to any of the various public health agencies Dietitians may act as nutrition consultants for organizations dealing with men rejected by draft boards due to physical unfitness. They may be consultants to flying corps where weight control is an important factor

Second, dietitians may be speakers on programs of allied professional groups or programs arranged for the lay public, such as women's clubs and parent-teacher associations By cooperating closely with allied professional organizations such as medical societies, hospital superintendents, nurses associations, welfare agencies, and state and local departments of health, the mem

bers of the association should function more effectively

Third, dietitians may contribute their services in the preparation of educational material concerning nutrition problems—for example, the planning of low-cost diets

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WORKMEN'S COMPENSATION

THE following resolution was adopted by the Industrial Board at a meeting held on October 13, 1939

"RESOLVED, that the Industrial Board is of the opinion that only a physician authorized under the provisions of Section 13-b of the Workmen's Compensation Law, may render medical treatment to a claimant in a compensation case, and that a podiatrist, chiropodist, optometrist, or any person not in the category of such authorized physician, who treats a claimant in a compensation case, cannot under the Workmen's Compensation Law, enforce the payment of a bill for services rendered to a claimant, and the testimony of such unauthorized person would only be competent in regard to services actually rendered by him under the active and personal supervision of an authorized physician "

Please note that only a qualified and authorized physician may render medical care to a compensation claimant. Podiatrists, chiropodists, optometrists, or any other person not a qualified physician may not render medical care and have his bill paid. Such persons and other persons who are licensed by the State of New York to render certain limited forms of medical care may treat patients only under the active and personal supervision of an authorized and qualified physician in accordance with the provisions of Section 13-b(c). Under these circumstances their testimony before the Department of Labor would only be competent in respect to the services rendered by them. They are in the category of technicians like a trained nurse or physical therapist who cannot render an opinion except as to the functions performed by them. If any such persons are accepting cases for medical treatment directly, the matter should be reported to this Bureau at once.

DAVID J. KALISKI, M.D., *Director*

ANOTHER REMEDY FOUND FROM WORK ON MAGGOTS

Following the medical discovery of the remarkable effectiveness of sterile blowfly maggots in healing stubborn wounds in human beings, Dr. William Robinson, of the Bureau of Entomology and Plant Quarantine, has continued investigations of the way maggots bring about such satisfactory results. He now finds that maggots produce a common and inexpensive chemical, ammonium bicarbonate, and that this compound stimulates healing.

Reporting to the medical profession through the *American Journal of Surgery*, the federal scientist makes his third announcement of healing substances produced by the maggots. In 1935 Dr. Robinson discovered that allantoin, which occurs in the secretions of maggots, heals wounds rapidly. The following year he found that urea, a simpler chemical, acted similarly. Ammonium bicarbonate is still a simpler chemical compound and is formed naturally from urea by the action of an enzyme called urease.

After testing the ammonium bicarbonate solution on animals, Dr. Robinson obtained the cooperation of physicians and surgeons, some of whom had previously used allantoin and urea. His report in the *Journal of Surgery* is largely a summary of their professional experience in treating infected wounds that did not yield to other methods. A 1 per cent solution proved effective when used either as a wet pack or as an irrigation of an open wound. Some of the conditions cleared up by the new treatment were chronic osteomyelitis, diabetic and varicose ulcers, middle ear infection, staph abscesses, infected lacerations, and other purulent wounds.

All three of the healing products Dr. Robinson has discovered in maggot secretions are also made synthetically by chemical means. It is not advisable, says Dr. Robinson, for a person unskilled in medicine to attempt to treat himself, and he should consult his physician who understands the details of his case.

Medical News

County News

Cattaraugus County

The new officers of the county society elected on July 11 are president, Arthur L. Runals, Olean, vice-president, Harry C. Allen, Gowanda, and secretary-treasurer, Leo E. Reimann, Franklinville.

Chenango County

A new officer to be known as "medical consultant" to the County Welfare Department was created on October 15 by the Board of Supervisors—salary \$750 per year.

The same resolution also provides for the zoning system of pay for medical services on welfare cases.

Under the new plan, which will cost the county about \$2,000 per year more than previous costs, doctors making calls on welfare cases will receive \$2.00 for calls under 2 miles, \$3.00 for over 2 miles and under 8, and \$4.00 for over 8 miles, thus to be the maximum.

Erne County

At a meeting in Hotel Statler on October 21, the county society heard a brief address by Dr. James M. Flynn, president of the State Society, and received a report from the economics committee assailing the action of Thomas W. H. Jeacock, county welfare commissioner, who recently ruled that clients of his department who need medical and surgical attention be sent to Edward J. Meyer Memorial Hospital instead of private institutions.

In his address, Dr. Flynn set forth many of the difficulties of the medical profession and explained how the State Society is working to eliminate them. He urged his listeners "to be honest and ethical at all times, for on your shoulders rests the preservation of a great and noble profession."

Essex County

At the annual meeting of the county society at Ticonderoga on October 1, these officers were elected for 1941: president, John S. Miller, Crown Point, vice-president, Albert S. Hayes, Willsboro, secretary-treasurer, Harold J. Harris, Westport, alternate secretary-treasurer, James E. Glavin, Port Henry, delegate to State Society, Harold J. Harris, Westport, alternate delegate to State Society, James M. Walsh, Ticonderoga, delegate Fourth District Branch, Joseph Geis, Lake Placid, alternate delegate Fourth District Branch, Thomas J. Cummins, Mineville, and censors John P. J. Cummins, Ticonderoga, John Breen, Schroon Lake, and Edwin C. Johnson, Newcomb. The meeting was devoted to discussion of military preparedness and cooperation with the State and National Society in this program.—*Reported by Harold J. Harris, M.D., Secretary*

Franklin County

The annual meeting of the county society was held in the Alice Hyde Hospital, Malone, on October 23.

The following program was presented:

Report of two surgical cases (1) diaphragmatic herniation of stomach and (2) diverticulum of last portion of duodenum—Dr. William Gaspar.

Seven-year cure of rectosigmoidal carcinoma—Dr. R. G. Perkins.

(1) Acute appendicitis with complications and (2) foreign body lung abscess—Dr. Philip Stamatiades.

Greene County

At the quarterly meeting of the county society at the Memorial Hospital, Catskill, on October 9, the following officers were elected: president, Dr. H. F. Weinauer, Windham, vice-president, Dr. W. V. Wax, Catskill, treasurer, Dr. W. Atkinson, Catskill, secretary, Dr. W. M. Rapp, Catskill, legislative committee, Dr. P. G. Waller, New Baltimore, committee of public relations, Dr. E. G. Mulbury, Windham, representative to state convention, Dr. K. G. Bott, Greenville, and alternate, Dr. Curtis R. Lacy, Freehold.

Kings County

The county society voiced opposition at its meeting on October 15 to a ruling of the Surgeon General of the United States barring graduates of foreign medical schools from commissions in the Medical Reserve Corps even though they may be American citizens and licensed to practice in this country.

The scientific program included these addresses: "Cesarean Section," by Dr. Louis E. Phaneuf and "Comments upon Certain Complications in Labor," by Dr. Edward A. Schumann.

In the Courses in Contemporary Medicine, Dr. Joseph C. G. Regan will speak on "Contagious Diseases" at 4:00 p.m. on November 25, and at 4:45 Dr. Lowell B. Eckerson will speak on "Serotherapy and Chemotherapy."

The Friday Afternoon Lecture on November 29 will be on "Radiation Therapy, Indications and Evaluation of Results," by Dr. William E. Howes.

The opening meeting of the Doctors' Club of Brooklyn was held at the Unity Club on October 29. Prominent members of the P.M. staff addressed the meeting.

Lewis County

At the annual meeting of the county society the following officers were elected: president, Thomas A. Lynch, Lowville, vice-president, David J. O'Connor, Croghan, secretary and treasurer, Elbert Dalton, Beaver Falls, censors, Claude H. Vadney, Lyons Falls, 1 year, Harry E. Chapin, Lowville, 2 years, Robert S. Gutsell, Copenhagen, 3 years, delegate to State Society, Elbert Dalton, Beaver Falls, and alternate, Edgar O. Boggs, Lowville.—*Reported by Elbert Dalton, M.D., Secretary*

Monroe County

Dr Irvine McQuarrie, professor of pediatrics at the University of Minnesota, on October 15 told members of the county society and their families of the effects of Japan's war on the civilian health of China.

Preceding the evening meeting, the Public Health Committee of the society met to consider reports of other committees studying communicable disease control measures.

In a speech broadcast on October 13, Dr Kaiser, president of the society, and Dr Clarence P Thomas, chairman of the Medical Defense Committee, praised the response of physicians who have supplied information necessary in the national defense program.

Dr Kaiser declared "The county society is in possession of information which will make it possible to place key men in various medical activities and care for the civilian population in the event of any emergency."

Civilian health in a national defense program was discussed on October 27 at a meeting sponsored by the county society, the Rochester Academy of Medicine, and the University of Rochester School of Medicine.

The meeting, planned in cooperation with the Tuberculosis and Health Association, was held at the Academy of Medicine Building. Dr William Bauer, director of the Bureau of Health Education of the American Medical Association, delivered an illustrated lecture titled, "Prepare for Health."

Rochester has moved to establish doctor-nurse units in small industrial plants in furtherance of the health defense program advocated by the National Association of Manufacturers.

Dr William A Sawyer, president of the Tuberculosis and Health Association, appointed a committee headed by E A Roeser, to confer with the Industrial Management Council and the county medical society to "work out details of a satisfactory and inexpensive plan whereby medical and nursing service can be supplied to a limited number of small industries in Rochester."

The Visiting Nurse Association now has three nurses trained for that work. Small plants mean those between 100 and 300 employees. The plan, if successful on a limited scale, probably will be extended.

The consolidation of the thirteenth annual Postgraduate Course of Lectures, sponsored by the Council Committee of Public Health and Education of the State Medical Society and held under the auspices of the Committee on Postgraduate Instruction of the county society, on the afternoon and evening of October 9, in the Academy auditorium, proved most successful.

The first lecture at 3:00 P.M. on "Gonorrhea" given by Dr Walter Clarke, executive director of the American Social Hygiene Association, attracted an attendance of ninety-two and evoked a lively and interesting discussion. By four o'clock the attendance had grown to 168. Dr W J Merle Scott of the University Medical School presented an interesting illustrated paper on "Some Problems in the Management of Gastric Lesions." An evaluation of procedures used in diagnosis of conditions needing treat-

ment of "The Lower Back," together with a discussion of therapeutic measures by Dr Samuel Kleinberg, of the Hospital for Joint Diseases in New York City, completed the afternoon session.

A subscription dinner at the University Club brought forth an attendance of forty.

The evening lecture on "Arthritis" by Dr Russell L Cecil, of the Cornell Medical School in New York City, attracted an attendance of 243.

Dr Sol C Davidson and his committee are to be congratulated for arranging such a novel and instructive teaching-day program.

New York County

The scientific program of the county society on October 28 was as follows: "Upper Abdominal Pains," by Dr M A Ramirez, with discussion by Drs E H Pool and L F Barker, Baltimore, by invitation.

Infections were the theme of The New York Academy's 1940 Graduate Fortnight, October 14 to 25. Twenty-seven evening addresses on the origin, diagnosis, and treatment of infections, involving the principal systems and organs of the body, were scheduled. Chemotherapy was featured prominently. The speakers were drawn from the leading research and medical institutions of the country. Clinics and clinical conferences were arranged in twenty-one leading hospitals in New York City.

Particularly noteworthy was the scientific exhibit at The New York Academy of Medicine in conjunction with the Fortnight. The exhibit included items on the history of infections, on the public health aspect of infections, and on specific infections affecting various parts of the body. Materials for the exhibits were drawn from the leading medical institutions in the United States and Canada.

Approximately 700 visiting physicians registered for the Graduate Fortnight, in addition to 2,300 Fellows of the Academy.

The following physicians were elected officers of the Physicians' Home at the meeting of October 15, 1940: president, George W Kosmak, honorary president, Chas Gordon Heyd, honorary vice-president, Warren Coleman, first vice-president, Max Einhorn, second vice-president, Silas F Hallock, treasurer, B Wallace Hamilton, secretary, William Bayard Long, assistant secretary, William M Wheeler, Jr, directors, Walter P Anderton, Silas F Hallock, William Travis Gibb, Jr, Joseph S Lawrence, Robert Emmet Walsh, Elise L'Esperance, Arthur J Bedell, of Albany, and Seth Milliken and John D'Aibora, of Brooklyn.

The facilities of the Medical Examiner's Office in New York and the Martland Laboratory in Newark are used in teaching courses in forensic medicine for graduate physicians, October 26 to May 10. Details will be supplied by the Dean, New York College of Medicine, 475 First Avenue, Manhattan.

Postgraduate courses in internal medicine and clinical electrocardiography are being given this year by the Fourth Medical Division of Bellevue Hospital, under the sponsorship of the New York University College of Medicine.

The course in internal medicine, repeated each month from October through May, is de-

signed to give the general practitioner a practical review of recent advances in diagnosis and treatment. Classes are held five mornings a week for the full month.

The course in clinical electrocardiography comprises one two-hour period weekly for fifteen weeks. It consists of a study of the interpretation of the electrocardiogram and its practical application. The course will be given twice during the academic year, October 7 through January 13, and again, February 3 through May 12.

Further information regarding these courses may be secured from Dr Charles H Nammack, director of the Fourth Medical Division of Bellevue Hospital

Oneida County

Dr Henry L Williams, Mayo Clinic, Rochester, Minn., addressed the Utica Academy of Medicine on October 17 on "Diagnosis and Treatment of Chronic Sinusitis," and Drs Harry Dan Vickers and J W Conrad, of Little Falls, spoke on "Steel Sutures in Surgery"

The New York State Society of Industrial Medicine, of which Dr L W Locke, of Utica, is president, held its twentieth annual meeting at the Hotel Utica on October 31. Some 150 state surgeons attended

Ontario County

The following officers were elected at the quarterly meeting of the county society at the Clifton Springs Sanitarium on October 8: president, Dr Malcolm Blakeslee, of Shortsville, president-elect, Dr E Deuel, of Geneva, secretary-treasurer, Dr D A Eiselne, Shortsville (for the forty-fourth consecutive term), board of censors, Dr P Standish, Canandaigua, Dr Alex Stewart, Naples, and Dr M Gaspar, Gorham, delegate to State Society, Dr H J Knickerbocker, Geneva, with Dr M Dickinson as alternate, editor of *Bulletin*, Dr John W Karr, Clifton Springs—Reported by John W Karr, M D

Dr Hubbard K. Meyers presented a paper on "Unusual Conditions of the Duodenum" on October 10 at a monthly meeting of the Canandaigua Medical Society, with Dr Harry M Smith as host.

Dr Smith presented lantern slides and moving pictures showing various degrees of burns and treatment of second and third degree burns

On November 14 the society met with the president, Dr Philip M Standish. The speaker of the evening was Dr E C Merrill

Otsego County

Dr Arthur H Brownell, of Oneonta, for over fifty years a member of the county society, has been elected an honorary life member

Queens County

The program of the county society on October 29 was a "Medical Military Symposium," with the following topics and speakers: "Aviation Medicine," by Dr Louis H Bauer, consultant physician, Central Islip and Southside Bay Shore hospitals, "Mobilization-Hospitalization," by Colonel Floyd Kramer, surgeon, Fort Totten, "The Place of the Civilian Physician in the Expansion of the United States Army," by Dr

John Kantor, Colonel, Medical Reserve, United States Army, and clinical professor of medicine, Columbia University, "Nutrition and National Defense," by Dr Morris Drazin, associate physician, Queens General, and physician-in-charge of nutrition at Queens General and Jamaica hospitals, "Submarine Medicine," by Captain Edward W Brown, Medical Corps, United States Navy

The Friday afternoon talks on November 1 and 15 were as follows: November 1, "Uterine Fibromyomata," by Dr William P Healy, gynecologist, Memorial Hospital, and consultant gynecologist, Seaview, New York Infirmary Women and Children, November 15, "Eye Examinations in Relation to the General Practitioner," by Dr Walter Hipp, assistant ophthalmologist, Manhattan Eye, Ear and Throat Hospital

Dr Henry C. Courten, of Richmond Hill, who died on October 15 at the age of 61, was a past-president of the county society

Rensselaer County

Dr I Murray Rossman, of the Harlem Valley State Hospital, gave an illustrated lecture on the insulin shock treatment for dementia praecox at the meeting of the county society at the Marshall Sanitarium on October 8. Dr John R. Ross also discussed the treatment "Operative Treatment of Elephantiasis" was the subject of a lecture by Dr Gerald H Pratt, associate surgeon, Post-Graduate Hospital, New York City, and his talk was illustrated by moving pictures

St. Lawrence County

Dr Fred L Ritter, of the army division headquarters staff, spoke on "The United States Army Medical Corps and Preparedness" at the annual meeting of the county society at the Arlington Inn in Potsdam on November 7

Schenectady County

"Medical Preparedness" was the topic of the meeting of the county society in the library of the Ellis Hospital on October 16

Schoharie County

The annual meeting of the county society was held at the Cobleskill Central High School on October 8. At the business session in the morning the following officers were elected: president, Dr David W Beard, of Cobleskill, vice-president, Dr Roy G S Dougall, of Cobleskill, secretary, Dr Duncan Best, of Middleburgh, treasurer, Dr Donald Lyons, of Middleburgh, delegate, Dr David W Beard, of Cobleskill, and censor, Dr Joseph Duell, of Jefferson

All officers were re-elected except Dr Lyons who was chosen to succeed the late Dr Herbert L Odell, of Sharon Springs

Dr Charles Lyons, of the Albany Hospital staff, spoke on "Medical Preparedness", Dr E J Callahan spoke on "Convalescence", and Dr Walter McClellan, medical authority of the Saratoga Springs, spoke on "Facilities of Treatment at the Spa."

Steuben County

Dr Willis S Cobb, of Corning, who died on October 5 at the age of 77, was a past-president of the county society. He had practiced medicine fifty years

Tompkins County

Tompkins County's oldest physician, and former Cornell faculty member, Dr Eugene Baker, 87, Ithaca, died on October 14, in Memorial Hospital after an illness of five days. He was a past-president of the county society.

Ulster County

Dr A O Gettler, chief toxicologist of the medical examiner's office of the city of New York, addressed a joint meeting of the Ulster County Bar Association and the county society on October 7 in Kingston, on "Chemistry in the Detection of Crime."

Warren County

Dr E J Fitzgerald was elected president of the county society at the annual meeting on October 17. He succeeds Dr H A Bartholomew. Other officers are Dr James A Glenn, vice-president, succeeding Dr H F Carroll, Dr Roger S Mitchell, re-elected secretary-treasurer.

A film sponsored by the American College of Surgeons, "The Diagnosis and Treatment of Infections of the Hand," was shown.

Washington County

Dr William C Cuthbert was elected president of the county society at the meeting on October 8 at the Hudson Falls Courthouse. Dr Elias W Young, of Cambridge, was named vice-president, with Dr Denver M Vickers, of Cambridge, as secretary and Dr Charles A Prescott, of Hudson Falls, as treasurer.

The board of censors was named to include Dr E V Farrell, of Whitehall, Dr R E Borrowman, of Fort Edward, and Dr Walter S Bennett, of Granville.

At the afternoon session the scientific program included a round table discussion of case reports of sulfanilamide and sulfapyridine. The discussion was opened by Dr Elias W Young. A moving-picture demonstration of the use of belladonna root as made by the Lederle Laboratories was shown.

At the evening session, Dr Peter Irving, secretary of the Medical Society of the State, spoke on the relation of the State Medical Society to medical preparedness, school health programs, and medical relief. Dr Lyle A Sutton, gynecologist to the Albany Hospital, discussed clinical aspects of endometriosis.

Westchester County

The Westchester Gastroenterological Society held a joint meeting with the staff of Grasslands Hospital on October 30 at Grasslands Hospital.

Dr William P Thompson of the College of Physicians and Surgeons spoke on "Indications for Splenectomy," and Dr Rousselot spoke on "The Results of Splenectomy."

Some forty members of the White Plains Medical Society attended the annual dinner at

the Gedney Farm Golf Club, in White Plains, September 25. A golf match scheduled for the afternoon had to be postponed because of rain. No formal program was presented at the dinner. Dr George H V Hunter, president of the society, presided.

On October 1 the Mount Vernon Health Department in cooperation with civic and medical leaders initiated a community-wide nutrition campaign to promote better health and to assist in the national defense program.

A survey of medical facilities for defense in Westchester County has been virtually completed and will shortly be placed in the hands of military authorities, it was reported by Dr Erich H Restin, of Mount Vernon, chairman of the special committee on medical preparedness, at the monthly meeting of the county society on October 15. Dr Henry J Vier, of White Plains, president, presided.

The committee has made a sectional study of hospital facilities and medical personnel in each of 11 sections of the county to develop information enabling military authorities to obtain adequate medical personnel without depriving communities of adequate distribution of general physicians and specialists.

At the same time the committee announced that it is preparing plans for the protection of the income and practices of physicians called away from home in military service and for the maintenance of their membership in the society.

A series of "refresher" sessions, as part of the society's postgraduate educational program, was announced by the public health committee. The first session of "The Management of Diabetes" was given by Dr Morton Ryder, of Rye, and Dr William C Meredith, of New Rochelle, at Lawrence Hospital, Bronxville, on October 23.

Disapproval of "certain features" of the medical aid plan operated by the Employees Mutual Aid Association of the Westchester Lighting Company was voted.

The resolution, adopted unanimously, contained a provision which "requests members (of the Medical Society) to henceforth charge Mutual Aid Association patients a fee not lower than the workmen's compensation schedule of fees."

Guest speaker at the meeting of the society was Dr William P Thompson, of New York, assistant professor of medicine at the College of Physicians and Surgeons, Columbia University. He spoke on "An Evaluation of Newer Laboratory Methods."

Opposition to the placing of Port Chester's health administration entirely in the hands of the Westchester County Health Commission, with resultant abolition of the present municipal health department, has been registered with the Board of Trustees by 48 physicians of Port Chester and vicinity, in a vigorously worded petition.

As a result of widespread use of collapse therapy in its dual capacity as a public health instrument and a medium of cure, the medical personnel of the Chicago Municipal Tuberculosis San-

itarium have become convinced that it offers the patient his best chance and the community its best protection.—A J Hruby, M.D., *Amer Rev Tuberc*, Sept., 1939.

Public Health News

THE *Course Outline Book*, containing information on postgraduate instruction offered by the Council Committee on Public Health and Medical Education, has been distributed to the county medical societies that have made requests for courses, teaching days, and special lectures available this year. To date, twenty such requests have been made—an unprecedented number at this time of year.

The course outlines have been revised this fall and several new courses have been added. In addition to the courses, more instruction is being offered in plastic and reconstructive surgery as a part of the medical preparedness program. Experienced and well-qualified surgeons are taking part in this work.

Teaching Days have been presented to two county medical societies. The Teaching Day plan is a combination of clinics, demonstrations, and lectures, developed to give greater emphasis to the clinical teaching of the subjects offered. A Teaching Day on rheumatic fever, given in cooperation with the State Health Department, was arranged for the Onondaga County Medical Society, in Syracuse, on October 1. Dr. Homer F. Swift, of the Hospital of the Rockefeller Institute for Medical Research, was the principal speaker. On October 9, a Teaching Day was presented to the Monroe County Medical Society in Rochester (see page 1682 for report).

The committee, in cooperation with the State Department of Health, is also prepared to offer special lectures on pneumonia. The Pneumonia Speakers' Committee has given thorough consideration to the material to be presented in the postgraduate medical instruction. The subject of chemotherapy, which has developed so rapidly, will receive special emphasis and consideration.

In addition to these subjects, speakers are available for single meetings for a discussion of the following: obstetrics, pediatrics, tuberculosis, syphilis, rheumatic fever, orthopedics, and cancer.

. . .

The Subcommittee on Maternal Welfare held a meeting in Syracuse on October 31 to which were invited the recently appointed Regional Consultants in obstetrics. The counties of the state have been grouped in twelve regions, and the consultant in each region will function through the subcommittee to survey maternity facilities, stimulate and provide county societies with a maternal and child health program, provide postgraduate refresher courses, distribute literature and standards, accumulate state and county statistics applicable to the problem of maternal and child welfare, plan obstetric conferences in each county or region, study neonatal deaths, still births, and particularly the problems of the premature infant. The following are the regions and the consultants appointed for each:

Region 1 New York, Richmond, Bronx

Dr. George Kosmak, New York City

Region 2 Kings, Queens, Nassau, Suffolk

Dr. Harvey B. Matthews, Brooklyn

Region 3 Westchester, Rockland, Dutchess, Putnam, Orange

Dr. Julian Hawthorne, Rye

Region 4 Schenectady, Fulton, Montgomery, Schoharie, Greene, Ulster

Dr. William M. Mallia, Schenectady

Region 5 Albany, Washington, Saratoga, Columbia, Warren, Rensselaer

Dr. Joseph O'C. Kiernan, Albany

Region 6 Clinton, Essex, Franklin, St. Lawrence

Dr. Elmer Wessell, Plattsburg

Region 7 Jefferson, Lewis, Herkimer, Hamilton

Dr. James L. Crossley, Watertown

Region 8 Onondaga, Oswego, Oneida, Madison, Cortland, Cayuga

Dr. Edward C. Hughes, Syracuse

Region 9 Broome, Tioga, Chenango, Otsego, Delaware, Sullivan
Dr Stuart B Blakely, Binghamton

Region 10 Monroe, Orleans, Wayne, Livingston, Ontario, Yates
Dr Ward L Ekas, Rochester

Region 11 Chemung, Schuyler, Steuben, Tompkins, Seneca, Allegany
Dr R Scott Howland, Elmira

Region 12 Erie, Niagara, Chautauqua, Cattaraugus, Genesee, Wyoming

Present at the meeting was Dr C W Gardiner, Director of the Division of Maternity, Infancy, and Child Hygiene of the State Health Department Dr Gardiner discussed the parts of the program in which the State Department of Health participates

. . .

Dr J G Fred Hiss, chairman of the Subcommittee on 4-H Club and other youth activities, reports that the final examination of county representatives to select the New York State boy and girl contestants in the National 4-H Club contest was held at the Syracuse Memorial Hospital on October 22 Eleven boys and girls who had already competed in county and district contests reported for the state final The examining physicians were Dr Richard Farr, orthopedist, Dr J G Fred Hiss, internist, Dr Gordon Hoople, otologist, Dr Harold Joy, ophthalmologist, and Dr Dyer Talley, dentist

Miss Hilda Merritt, fifteen years old, of Chautauqua County, was selected as the most perfect girl, and Miss Emily Briggs, fifteen years old, of Delaware County, as alternate Mr Ronald Roff, eighteen years old, of Broome County, was selected as the most perfect boy, and Mr Edward Benson, eighteen years old, of Oneida County, as alternate These winners will go to the National 4-H Club contest to be held in Chicago, early in December, where the most perfect boy and girl will be chosen

Deaths of New York State Physicians

Name	Age	Medical School	Date of Death	Residence
John Aquaro	64	P & S N Y	October 15	Manhattan
Eugene Baker	87	Michigan	October 14	Ithaca
Morris Bander	39	Univ & Bell	October 22	Manhattan
John R Bolognino	59	Turn	October 22	Manhattan
Robert G Cook	76	P & S N Y	October 25	Canandaigua
Henry C Courten	61	Univ & Bell	October 15	Richmond Hill
Howard C Fairbanks	55	Buffalo	October 13	Tonawanda
Willy Flegenheimer	48	Wurzburg	August 8	Richmond Hill
Isaiah Frank	64	N Y Univ	September 14	Manhattan & Beechhurst
George W Goler	76	Buffalo	September 18	Rochester
Melvin D Hereford	44	Kansas	October 25	Great Kills
Edward E Hicks	70	N Y Univ	October 18	Brooklyn
Victor J Jacobsohn	48	L I C Hosp	August 27	Manhattan
Frederick H Ladd	63	Albany	October 19	Canton
Bernard C Marantz	50	Maryland Med Col	August 16	Manhattan
Francis J Noonan	60	Albany	October 18	Troy
Solomon Rothman	56	Univ & Bell	August 28	Manhattan
Charles J Sage	36	Vermont	October 18	Manhattan
J Henry Siegel	57	L I C Hosp	October 24	Huguenot Park
Frances J Weiser	52	L I C Hosp	August 9	Manhattan
Bernard Weiss	36	L I C Hosp	October 21	So Ozone Park

Medicolegal

LORENZ J. BROSNAN, ESQ

Counsel, Medical Society of the State of New York

Liability of Hospital for Negligence of Nurse

THE Appellate Division of the Supreme Court of this state for the First Judicial Department a short time ago handed down a decision that well illustrates the rule of responsibility of public hospitals.*

The plaintiff in the action was a registered nurse in the employ of Bellevue Hospital. Her claim arose out of the fact that while on night nursing duty she became ill suffering nausea and vomiting and was sent to the nurses' infirmary. A staff physician attending her ordered injections by hypodermic of a morphine solution called "Magendie" to stop vomiting. She was, according to the testimony on the trial, over a period of three days given four such injections, the dose being seven minims into the upper portion of her left arm. She stated that she took no notice of the first three, but that when the fourth injection was given she was feeling better and noticed as the injection was being made that the solution injected was of a brownish color. She claimed to have then looked at the bottle from which the other nurse who had given her the injection had drawn the fluid and identified it as a bottle of Magendie that had been in the nurses' infirmary for six months to her knowledge. She alleged, however, that it was the customary hospital practice to change such solutions weekly.

She testified on the trial that following the injections her arm became sore and swollen and required wet dressings, keeping her in the infirmary for an additional week. She said she then attempted to resume work, but the condition became worse, the arm was lanced on certain occasions, draining pus. After six weeks x-rays were taken and one of the surgeons operated upon the arm. She claimed that even after the operation the arm was such as to prevent her from resuming her duties as a nurse, so at the end of about four months she resigned from her position.

She called as a witness a professor of pharmacy who testified that Magendie would readily decompose and that when fresh was colorless, but when stale would appear brownish and contain bacteria or microorganisms.

A physician called on her behalf described her condition as that of having a permanently useless left hand and arm. He attributed the condition to infection arising from the injections.

The trial of her action against the City of New York for damages resulted in a verdict of \$20,000.

The City appealed from the judgment of the Trial Court, among its contentions being that the plaintiff should have made her claim one for Workmen's Compensation instead of a common law action based upon alleged negligence and

also that no actionable negligence for which the defendant could be responsible had been shown.

The Appellate Division ruled that the judgment should be reversed and the complaint dismissed. It supported the contention that the proper remedy for the plaintiff would have been under the Workmen's Compensation Law and also found that liability had not been established regardless of the question of compensation. In passing upon the latter point the Court said in the opinion:

"A public hospital not run for profit is not liable for the negligence of its physicians and nurses in the treatment of patients if due care has been taken in their selection, no distinction is made between the position of a nurse and that of a physician, and none is justified on principle. That rule of exoneration has been applied even to an orderly when engaged in caring for a patient. In such professional acts physicians and nurses are not the agents and servants of the hospital, and the rule of respondeat superior does not apply. Nurses are held to be professional persons employed to exercise their calling on their own responsibility under the general direction of the physician in charge and are grouped with physicians and surgeons and not with cooks, chambermaids, etc., employed in purely ministerial and administrative functions.

While the rule of respondeat superior does not apply in the case of doctors and nurses, it is now settled that a charitable institution is not exempt from the application of that rule in the case of injury to a patient or beneficiary occasioned by the negligence of one of the hospital's merely administrative servants or employees such as the driver of its ambulance when functioning in that character. Assuming the relation as claimed by plaintiff, we think that plaintiff's own proof establishes as a matter of law that her injuries were proximately caused by the malpractice of the nurses who gave the four injections, for which professional negligence even to a paying patient defendant, as owner of a public hospital, has no liability. Plaintiff's proof is that when the Magendie solution turns brown it is obviously stale and dangerous. She testified she observed the brown color of the solution in the transparent glass hypodermic syringe at the very instant the fourth injection was being given. If visible to her in that instantaneous glance, it must have been perfectly obvious to each of the nurses who first drew the Magendie from the bottle into the hypodermic syringe of transparent glass before each injection, and in spite of its obvious, dark brown color, indicating to a professionally trained nurse that it was decomposed, stale and dangerous,

* *Volk versus City of New York* 24 New York Law Journal 223

nevertheless deliberately injected the solution into her arm

"There is no proof that when the Magendie solution was originally furnished by defendant, as the owner and operator of the hospital, it was not fresh, clear and good for the medical purposes for which it was intended. The proof was that it deteriorated and became stale and dangerous for such use by being allowed to stand. In that state of facts we think defendant was not guilty of an administrative act of negligence proximately causing plaintiff's injuries. In this case, even assuming that the relation at the time was that of a paying patient and a public hospital, the negligence in proximately causing the injury is that of nurses exercising purely professional functions. If there are duties performed by nurses different from their duties in carrying out the physicians' orders for the care of patients and having relation to the administrative conduct of the hospital, it was not in the discharge of such duties that defendant's nurses were serving when the injections were made. Indeed, the repeated injections, after deterioration had obviously set in, were acts of

professional negligence on the part of the nurses so gross, reckless and extraordinary as to operate as an independent and superseding cause for which defendant could not be held liable

"It seems preposterous to assume that in a hospital such as Bellevue Hospital, New York City, a fresh supply of this ordinary drug would not have been readily available and would not have been readily supplied to the nurses by the hospital in August, 1933, when it was needed for this patient. The gross negligence of those nurses who, according to plaintiff, deliberately injected the decomposed solution into plaintiff's arm on four successive occasions was the sole proximate cause of plaintiff's injury, for which defendant has no liability

"We think, too, defendant was exercising a governmental function in supplying nurses in Bellevue Hospital for the care of the indigent poor, and even assuming plaintiff's theory that the relation was that of hospital to patient, defendant's common-law governmental immunity precludes the present action and such immunity has not been waived."

Inquiries

Your Counsel recently received the following inquiry

"Dear Mr Brosnan

Should a patient die as the result of the administration of an anesthetic administered by me, would I be liable to suit for damages or is the surgeon alone responsible

This is a hypothetical question as I do not expect to have this accident happen

It is my understanding that as a result of the surgeon's attitude toward anesthesia, he has wished on himself the legal responsibility which this administration entails

Cordially yours,"

Your Counsel's reply was as follows

"Dear Doctor

If a patient should die as the result of the administration of an anesthetic administered by you, you would be liable to suit for damages. The surgeon ordinarily would not be responsible unless special circumstances were present that would make applicable to him some principle of legal responsibility

The rule is based upon the fact that the surgeon and the anesthetist are in the eyes of the law independent contractors, each responsible for his own act but not for the act of the other

Very sincerely yours,"

Your Counsel recently received the following inquiry

"Dear Sir

Have I as a physician a legal right without liability of suit for damages of publishing and

offering for sale a list of uncollectible accounts of patients, some of which have outlawed—others have not? This question has been recently discussed among us physicians. I should like to hear officially and legally from the Society regarding it

Very truly yours,"

Your Counsel's reply was as follows

"Dear Doctor

At the outset, a legal difficulty presents itself with respect to the publication of uncollectible accounts of patients. The patient might challenge the reasonableness of the amount published in any instance. If ultimately this claim were shown to have merit you would then be in the position of publishing something that was not accurate, but entirely apart from the legal question involved, I would strongly advise you not to make any such publications

There is, I believe, an ethical principle involved in this matter. In addition, to make such publication would in my opinion invite lawsuits. Even if you were successful in establishing your right to publish the names, and I have already pointed out some difficulties in that connection, this would not in any wise affect the nuisance and expense of defending such suits

In addition to what I have already said, it might well be that a Court would hold that the publication of these names constituted a violation of the Privileged Communications Statute in this state

Yours very truly,"

It is to be hoped that the generally accepted opinion that all elderly persons must cough and that coughing is without danger to those about them will soon be changed, and that all elderly

persons with a chronic cough will be subjected to a physical examination as rigorous as if they were younger—E R Wiese, *Am Rev Tuberc*, Feb, 1940

Books

Books for review should be sent to the Book Review Department at 1313 Bedford Avenue Brooklyn, N Y. Acknowledgment of receipt will be made in these columns and deemed sufficient notification. Selection for review will be based on merit and the interest to our readers

RECEIVED

Atlas of Cardio-roentgenology By Hugo Roessler, M D Folio of 124 pages, illustrated Springfield, Charles C. Thomas, 1940 Cloth \$8.50

Rheumatic Fever Studies of the Epidemiology, Manifestations, Diagnosis, and Treatment of the Disease During the First Three Decades By May G Wilson, M D Quarto of 595 pages, illustrated. New York, Commonwealth Fund, 1940 Cloth, \$4.50

Manual of Medical and Surgical Emergencies. Edited by J C. Geiger, M D Octavo of 189 pages San Francisco, J W Stacey, Inc., 1940 Cloth, \$2.50

Clinical Methods A Guide to the Practical Study of Medicine. By Sir Robert Hutchison, M D, and Donald Hunter, M D Eleventh edition. 16 mo of 622 pages, illustrated New York, Paul B Hoeber, Inc., 1940 Cloth, \$5.00

Bailey's Textbook of Histology. By Philip E Smith, Ph.D., Editor, and others Tenth edition. Octavo of 764 pages, illustrated. Baltimore, Williams & Wilkins Co, 1940 Cloth, \$6.00

Pharmacology and Therapeutics. By Arthur R. Cushny, M.D Twelfth edition by C W Edmunds, M D, and J A. Gunn, M D Octavo of 852 pages, illustrated Philadelphia, Lea & Febiger, 1940 Cloth, \$6.50

Heart Failure. By Arthur M Fishberg, M D Second edition. Octavo of 829 pages, illustrated Philadelphia, Lea & Febiger, 1940 Cloth, \$8.50

Behind the Scenes of Murder By Joseph Catton, M D Octavo of 355 pages New York, W W Norton & Company, 1940 Cloth, \$3.00

Problems of Nervous Anatomy By J Boeke, LL D Octavo of 164 pages, illustrated New York, Oxford University Press, 1940 Cloth, \$2.75

Diseases of the Nervous System. By W Russell Brain, M.A. Second edition. New York, Oxford University Press, 1940 Cloth, \$9.25

An Introduction to Pharmacology and Therapeutics. By J A Gunn, M D Sixth edition 16 mo of 242 pages. New York, Oxford University Press, 1940 Cloth, \$1.75

Clinical Electrocardiography By David Scherf, M.D., and Linn J Boyd, M D Octavo of 362 pages, illustrated St. Louis, C V Mosby Company, 1940 Cloth, \$6.25

Acute Infectious Diseases. A Handbook for Practitioners and Students By J D Rolleston, M D, and G W Ronaldson, M D Third edition. Octavo of 477 pages St. Louis, C V Mosby Company, 1940 Cloth, \$4.50

The Injured Back and Its Treatment. Edited by John D Ellis, M D Quarto of 377 pages,

illustrated Springfield, Charles C Thomas, 1940 Cloth, \$5.50

The Fundamentals of Nutrition. By Estelle E Hawley, Ph.D., and Esther E Maurer-Mast, M D Including Table of 100-Calorie Portions by Estelle E Hawley, Esther E Maurer, and Herbert F Van Epps, and Discussions of the Dietary Management in Specific Conditions by collaborators associated or formerly associated with the University of Rochester, School of Medicine and Dentistry Quarto of 477 pages, illustrated Springfield, Charles C Thomas 1940 Cloth, \$5.00

Applied Pharmacology By Hugh A McGugan, M D Octavo of 914 pages, illustrated St. Louis, The C V Mosby Co, 1940 Cloth, \$9.00

Physical Diagnosis. By Ralph H Major, M D Second edition Octavo of 464 pages, illustrated Philadelphia, W B Saunders Co, 1940 Cloth, \$5.00

Introduction to Medical Biometry and Statistics By Raymond Pearl Third edition Octavo of 537 pages, illustrated Philadelphia, W B Saunders Co, 1940 Cloth, \$7.00

A Textbook of Medicine By American Authors Edited by Russell L Cecil, M D Fifth edition. Octavo of 1744 pages, illustrated Philadelphia, W B Saunders Co 1940 Cloth, \$9.50

Getting Ready to Be a Mother By Carolyn C Van Blarcom. Fourth edition revised by Hazel Corbin Duodecimo of 190 pages, illustrated New York, The Macmillan Company, 1940 Cloth, \$2.50

The Outbreak of Poliomyelitis, City of Buffalo, 1939 By Francis E Fronczak, M D, commissioner of health. Quarto of 48 pages, illustrated Buffalo, New York, Department of Health, 1940 Paper

The Histamine and Insulin Treatment of Schizophrenia and Other Mental Diseases By Horace Hill, M R C P Duodecimo of 133 pages Baltimore, Williams & Wilkins Co 1940 Cloth, \$1.75

The Chemical Composition of Foods. By R. A. McCance and E M Widdowson Octavo of 150 pages New York, Chemical Publishing Company, 1940 Cloth, \$2.50

The New International Clinics. Original Contributions Clinics, and Evaluated Reviews of Current Advances in the Medical Arts Edited by George M Piersol, M D Volume III, New Series Three Octavo of 358 pages, illustrated Philadelphia, J B Lippincott Co, 1940 Cloth, \$3.00

Management of the Cardiac Patient. By William G Leaman, Jr, M D Octavo of 705 pages, illustrated Philadelphia J B Lippincott Co, 1940 Cloth, \$6.50

The Diagnosis and Treatment of Cardiovascular Disease Edited by William D Stroud, M D Volumes I and II Quarto of 1825 pages, illustrated Philadelphia, F A Davis Company, 1940 Cloth, \$18

Communicable Diseases By Nina D Gage, R N, and John F Landon, M D Second edition Octavo of 411 pages, illustrated Philadelphia, F A Davis Company, 1940 Cloth, \$3 50

Public Health Administration in the United States. By Wilson G Smilie, M D Second edition Octavo of 553 pages, illustrated New York, The Macmillan Co, 1940 Cloth, \$3 75

Laboratory Text in Pharmacology By Robert P Walton Quarto of 85 pages Philadelphia, J B Lippincott Co, 1940 Paper

Dermatologic Therapy in General Practice. By Marion B Sulzberger, M D, and Jack Wolf, M D Octavo of 680 pages, illustrated Chicago, The Year Book Publishers, 1940 Cloth, \$4.60

Hugh Young A Surgeon's Autobiography Octavo of 554 pages, illustrated New York, Harcourt, Brace and Co, 1940 Cloth, \$5 00

Progress in Medicine A Critical Review of the Last Hundred Years By Iago Galdston, M D Octavo of 347 pages New York, Alfred A Knopf, 1940 Cloth, \$3 00

Borrowed Children. A popular account of some evacuation problems and their remedies. By Mrs St Loe Strachey Duodecimo of 149 pages New York, The Commonwealth Fund, 1940 Cloth, \$0 75

REVIEWED

Modern Cosmetology The Principles and Practice of Modern Cosmetics By Ralph G Harry, F I C Octavo of 288 pages New York, Chemical Publishing Co, 1940 Cloth, \$5 00

This is a reference book of the first order. It deals comprehensively with the scientific and therapeutic side of cosmetics and is written by a gentleman whose expert chemical knowledge is evidenced in every part of the book. The histology of the skin, hair, and nails is briefly but interestingly described. The latest thought on the absorption of various substances, including hormones and vitamins, through the skin and the subjects of allergy and dermatitis are intelligently discussed. Several excellent photomicrographs accompany the text, and practically every statement that might be open to discussion is fortified by one or more references.

As a reference book for the dermatologist, the manufacturer, and even the general practitioner interested in the subject of cosmetics and their preparation and usage, this volume will hold a prominent place, it includes among the hundreds of formulas for the preparation of every cosmetic of known value a description of the newer proprietary emulsifying agents of proved efficacy and makes an effort to indicate their chemical nature.

NATHAN T BEERS

Our Sex Life A Guide and Counsellor for Everyone By Fritz Kahn M D Octavo of 459 pages, illustrated New York, Alfred A Knopf, 1939 Cloth, \$6 00

This book is intended to be a guide and counsellor for everyone. It is a complete volume, covering every aspect of sex. The sex cells, the male and female sex apparatus, the sexual functions of each sex, coitus, the hygiene of sex life, the various aspects of fertility, birth control, abortion, contraception, sexual disturbances, diseases of sex life, syphilis and gonorrhea, and social and psychologic aspects are thoroughly discussed. The book is written in simple language and illustrated adequately.

When one considers modern civilization with its taboos and inhibitions and the delicate relationship existing between men and women in the modern industrial era, the need for a well-rounded

book on the subject is quite apparent. Physicians, clergymen, and educators are now more than ever consulted by people regarding problems encountered in their sex life. Physicians in particular are frequently faced with problems presented by their patients which are the result of disturbances in their sex life. Unfortunately, the average medical school does not cover this phase of illness adequately.

The book fulfills a need. It is highly recommended to all those who recognize the significance of sex in its broadest implications. The general practitioner will find it a useful addition to his library. The educator, the clergyman, and the social service worker will do well to read the book. Colleges would do well to use it as a textbook in their courses in social hygiene. It is highly recommended because it covers the subject thoroughly and well.

IRVING J SANDS

Asthma. By Frank Coke, F R C S Second edition Octavo of 266 pages, illustrated Baltimore, Williams & Wilkins Co, 1939 Cloth, \$4 00

This is the second edition of a work that was first published 16 years ago. Except for an introductory chapter on anaphylaxis and a very short section on allergic manifestations other than asthma, the bulk of it deals with the various aspects of bronchial asthma based on the authors' experience with 3,000 patients.

The author has written the present edition primarily to present his methods of investigation and treatment of the infective type of bronchial asthma. For this reason he has dealt extensively with the problems of bacteriology and serology associated with bronchial asthma. He has purposefully limited the bibliography.

The book should prove of some interest to the practitioner and to the allergist.

MAX HARTEN

Modern Urology for Nurses. By Sheila M Dwyer, R N, and George W Fish, M D Octavo of 290 pages, illustrated Philadelphia, Lea & Febiger, 1940 Cloth, \$3 25

This book of 260 pages is well printed, well indexed, and adequately illustrated. It will fill a needed place in every urologic service. It will be of value to residents and to head nurses. Espe

cially for teaching purposes, it is indispensable—the best of its kind we have seen

J STURDIVANT READ

An Index of Treatment. By Various Writers Edited by Sir Robert Hutchison, M D Twelfth edition. Quarto of 996 pages, illustrated Baltimore, Williams & Wilkins Co., 1940 Cloth, \$12

The twelfth edition of this well-known encyclopedia of therapy has just appeared and remains as reliable and useful as its predecessors. A vast amount of useful information will be found in this volume, which can be described as a companion book to French's *Differential Diagnosis*. The entire book has been given a thorough revision. New articles have been added and others rewritten. However, no volume can hope to keep abreast of all recent advances, particularly since the rebirth of chemotherapy. Granting certain shortcomings inherent in any such bound publication, the work is none-the-less extremely useful.

ANDREW M. BABEY

Reports on Medical Progress As Published in the New England Journal of Medicine Compiled and edited by Robert N Nye M D Octavo of 562 pages Boston, Little Brown & Co., 1940 Cloth, \$5 00

This excellent yearbook collects and reprints the fifty-two reviews of the widely varied fields of medicine published in the *New England Journal of Medicine*. Each review is written by an expert in his field, reports briefly the progress made during the year, and has appended a useful bibliography. There is a general index at the end. There will be a wide appeal not to the general practitioner alone but to all specialists who wish to keep abreast of developments in other specialties and to look up specific points from time to time. The internist, for example, may wish the latest available information on psoriasis and the orthopedist may wish to refer to the latest developments in the field of anesthesiology. The vast majority of the articles are well written although there is some unevenness and necessarily, some overlapping, but this book will be welcomed by a great audience for its general excellence.

MILTON PLOTZ

Principles of Surgical Care Shock and Other Problems. By Alfred Blalock, M D Quarto of 325 pages, illustrated St Louis, C V Mosby Co., 1940 Cloth, \$4.50

In an era when surgical attention has turned from descriptions of awe-inspiring procedures to the applied physiology of the surgical patient, the appearance of a monograph like Dr Blalock's is truly refreshing.

Nothing is overlooked during the preoperative period. The often ignored elements of anxiety and fear of the surgical patient, fluid balance, rest, and preanesthetic medication for various types of patients and in relation to the surgical problem are discussed along with advantages and disadvantages of each anesthetic and preanesthetic agent in common use. In agreement with Flagg, Dr Blalock feels that anesthesia by ether gas is the safest known although the present enthusiasm for spinal anesthesia will

increase even further since additional measures for controlling its action will result in a lessening of the dangers associated with its use.

In discussing systemic effects of poor surgical technic, respect for tissue, particular care to avoid unnecessary trauma to large blood vessels attention to the proper use of retractors, and the advantage of applying ligatures to large veins as close as possible to the main vessel are points stressed. The subject of cardiovascular disease as it bears on surgical risk is given in a manner that is as clear as it is concise.

The piece de résistance comes with the chapter on shock or peripheral circulatory failure. Here one finds a beautiful summary of present-day knowledge of the subject so richly enhanced by original work of the author.

Fluid and electrolyte, acid-base, nutritional and endocrine disorders of the surgical patient together with a complete yet not tiring discussion of the postoperative complications and treatment are given.

Since this book bids fair to become a live member of every medical library rather than another sleeper on the shelves, one cannot help recommending it most heartily.

ANTHONY F. SAVA

The Surgery of the Alimentary Tract. By Sir Hugh Devine, F.A.C.S. Octavo of 1,046 pages, illustrated Baltimore, Williams & Wilkins Co., 1940 Cloth, \$15

Australia's distinguished surgeon has fashioned out of his extensive experience in abdominal surgery a most interesting and informative volume. The work is frankly not designed as an all-inclusive treatise on all phases of gastrointestinal surgery but rather presents the author's personal experience and individual technic as a guide to the practicing surgeon and postgraduate student.

Devine emphasizes the physiologic approach to abdominal surgery, devoting a full third of the book (Part one) to a discussion of the diagnosis of "surgical dyspepsia" considered from the clinical, radiographic, and gastroscopic angles. Part two covers the actual surgical treatment of diseases placed in the dyspeptic group and includes all important operations of the upper abdomen and their postoperative complications. Part three is a brief but practical account of the strategy of surgical approach to the more common abdominal emergencies, perforation and obstruction. Part four concludes with consideration of the surgery of the lower abdomen, principally appendicitis and colonic and rectal surgery. The author's technic of the "disconnecting anus" for defunctioning of the large bowel (called the Devine colostomy in this country) has recently engaged the attention of American surgeons. The indications, technic, and results of this procedure are well presented.

The reader will find unusually clear descriptions of other standard operations such as gastroenterostomy, several types of gastrectomy, gastric exclusion, and various procedures on the large bowel as practiced by the author. In each case the physiologic indication and results are discussed as well as the anesthesia and operative technics, amply illustrated with well-drawn sketches or retouched photographs. Of special interest are the details of Devine's mechanical

contributions, principally the author's ingenious operating frame with its various attachments and "mechanical hands" and his specially designed sharp spade-ended dissecting scissors which he seems to prize very highly

HAROLD KOPPELMAN

A Textbook of Physiology By William D Zoethout, Ph D, and W W Tuttle, Ph D Seventh edition Octavo of 743 pages, illustrated St Louis, C V Mosby Co, 1940 Cloth, \$4 50

The seventh edition of this well-known text for dental and college students presents the current concepts of physiology in a clear, terse manner. The book should prove valuable for students wishing an elementary treatment of the subject

G B RAY

Synopsis of Pediatrics By John Zahorsky, M D, assisted by T S Zahorsky, M D Third edition. Duodecimo of 430 pages, illustrated St. Louis, C V Mosby Co, 1939 Cloth, \$4 00

This little volume is primarily for the medical student who has not time for exhaustive reading, hence, all subject matter is abbreviated. A great many diseases are merely defined in a paragraph. Numerous and well-placed illustrations constitute the most valuable asset to the book. The practitioner will find but little assistance if he is seeking aid in differential diagnosis or treatment of disease. Laboratory methods and detail in general are purposely omitted.

It is truly a synopsis, yet many may find it useful in their library

THURMAN B GIVAN

The Early Diagnosis of the Acute Abdomen By Zachary Cope, M D Eighth edition Octavo of 257 pages, illustrated New York, Oxford University Press, 1940 Cloth, \$3 75

No book can reach its eighth edition unless it has fundamental merit. Little more need be said about this work first published in 1921. The differential diagnosis and acute abdominal conditions cannot be overemphasized. This book, therefore, deserves a place in the library of any physician interested in the problem. The subject matter is up to date, is well written, clearly presented, and thoroughly discussed.

B M BERNSTEIN

Sulfanilamide, Sulfapyridine and Allied Compounds in Infections. By Maurice A Schmitz, M D Edited by Henry A Christian, M D (Reprinted from Oxford Loose-Leaf Medicine.) Octavo of 72 pages, New York, Oxford University Press, 1940 Cloth, \$1 50

Dr Schmitz's small book is a welcome summary of the latest advances in human chemotherapy. It is well written and informative. Its extremely reasonable cost is an attraction in a field where changes and advances are being made so rapidly

MILTON PLOTZ

Clinical Heart Disease By Samuel A Levine, M D Second edition. Octavo of 495 pages Philadelphia, W B Saunders Co, 1940 Cloth, \$6 00

That a second edition of this book is called for within a comparatively short time testifies to its value. The object of the book is to provide clinical data which the practitioner can utilize at the bedside. Indeed, the form of the book is similar to the previous edition. Besides this there is a good section on electrocardiography, and the precordial lead has been changed to conform with the nomenclature adopted by the American Heart Association and the Cardiac Society of Great Britain and Ireland. The views expressed in the book represent briefly the result of the author's large experience, and there is little that would not receive universal acceptance by cardiologists. The descriptions are simple and avoid the use of complicated technical terms which are most familiar to specialists in the field. As heart disease is so prevalent, it is important that all should be familiar with the modern concepts of this problem. Therefore, this volume can be recommended as a valuable addition to the library of all physicians

J HAMILTON CRAWFORD

Minor Surgery By Frederick Christopher, M D Fourth edition Octavo of 990 pages, illustrated Philadelphia, W B Saunders Co, 1940 Cloth, \$10

The fourth edition of this book covers practically all problems of minor surgery. It is one of the most complete and concise textbooks that has been published on the subject. The text covers minor injuries and infections of all parts of the body.

Some of the new material included in this edition is the clinical recognition of rabies in dogs, the use of tetanus toxoid, the newer treatments of burns, injection treatment of hemangioma, episacroiliac lipoma, injuries from pneumatic drills and from injection of oil at high pressure, treatment of subdeltoid bursters by needling, synoviotomy, sternal marrow aspiration, intravenous administration of anesthetics, treatment of precancerous skin lesions.

Some sections have been rewritten particularly those dealing with varicose veins, thrombophlebitis, head injuries, manipulative treatment for low back pain, acute osteomyelitis, chondroma, blood grouping, blood transfusion, postoperative management of the water and electrolyte balance, etc.

Every physician should include this volume in his library with the conviction that he has made an addition to his general working knowledge.

RALPH F HARLOW

Frank Howard Lahey Birthday Volume, June First, Nineteen Hundred Forty Octavo of 466 pages, illustrated Springfield, Charles C. Thomas, 1940 Cloth

This volume is a "Festschrift" in honor of Dr Lahey's sixtieth birthday. Numerous well-known clinicians and laboratory workers contribute excellent articles, particularly on the disorders of the gastrointestinal tract and the thyroid gland. Among the better known authors are Abell, Allen, Andresen, Balfour, Crie, Graham, Ivy, Meigs, and Walters. The book is well worth reading.

ANDREW BABEY

NEW YORK STATE JOURNAL *of* MEDICINE

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Editorial

What Are the Facts?

The editors of the JOURNAL believe that the subject of voluntary health insurance is one of the most intriguing topics under discussion today both by professional and lay people. What is it? How did it come about? What does it propose to do? Will it work? Under what circumstances?

It is our good fortune to be able to present in this issue a short, factual study of the development of voluntary health insurance in the United States by Drs. Donald K. Freedman and Elnor B. Harvey, together with an extensive bibliography. We believe that such information is badly needed both by lay and professional people in order that they may discuss the subject rationally and with perspective in a spirit of mutual understanding. No single modality can solve all of the medical and sociologic problems of this era which nobody understands. But the insurance principle can probably be adapted to many of them with success, more fully and more widely than seems practicable at the present time.

Creation of medical insurance schemes by fiat or in satisfaction of political ambitions or as an alleged solution of political perplexities seems to us inexcusable exploitation not only of the people but of the medical profession also. On the other hand, neglect by the profession and the people to study and to create workable devices based on the insurance principle wherever possible is equally inexcusable. A prime requisite of this course of action is that doctors and those of the laity with whom they discuss insurance proposals should know what they are talking about.

Short, simply expressed articles of the kind herewith presented, dealing factually with all phases of the medical insurance problem, should be made easily available to discussion groups. Out of a mutual understanding of the problems involved and with an informed

perspective on the evolution of voluntary health insurance, practical, workable patterns should emerge adapted to the necessities as well as the temperament of the American people

Conferences on Therapy

Beginning with this issue, the JOURNAL will from time to time publish informal conferences on therapy. The material, edited by Dr. McKen Cattell, is derived from joint conferences held by the departments of medicine and pharmacology of Cornell Medical College. The editors of the JOURNAL believe that our readers will benefit by these practical discussions of treatment and that they will like the informal character of the conferences.

However, editors are not always infallible in spite of rumors to the contrary. We have studied carefully the material of these discussions. The decision of the Committee on Publications to print them rests on the belief that they are informative, practical, and that you who read them will be interested. Similar conference reports, we are reliably informed, have evoked the interest of readers of other journals in which they have been printed. We have taken these facts into consideration and are publishing these conferences on therapy on the supposition that our judgment is correct and that you who read them will like them, but are we correct?

Dr. Cattell who is editing the material, besides being an outstanding pharmacologist, is a human being like the rest of us. He and we should appreciate knowing how you like the material. You are paying to publish this JOURNAL. Why not have the kind of publication you want? Most of you can write. Don't deny it. We know you can, but will you? Don't be bashful, it's just a pose. We'll start you off. How do you like the conferences on therapy?

Twenty Years

The October, 1940, issue of the *American Journal of Obstetrics and Gynecology* marks the twentieth anniversary of its founding. Under the able editorial direction of Dr. George W. Kosmak and Dr. Hugo Ehrenfest, this publication has become one of the outstanding examples of American medical journalism. Replacing, in December, 1919, the *American Journal of Obstetrics and Diseases of Women and Children* founded in 1868, it is now the official organ of eighteen specialist societies in the United States.

Much of the credit for the excellence of the *Journal* must be ascribed, among others, to Dr. Kosmak, treasurer of our own Medical

Society of the State of New York His critical judgment, his good taste both literary and typographic, his inexhaustible energy and business acumen carried the publication successfully through the difficult postwar days of its founding and assured its present excellence It is one of the regrettably small number of medical publications which has successfully encouraged and happily obtained clarity and brevity in the work of its contributors Its professional writers are not numbered among those who frequently "Charm aches with air, and agony with words,"* though their daily pre-occupation is with the fair but loquacious sex On the contrary, their scientific contributions are usually as practical as their exposition is brief Such writing and editing may well serve as an example to be emulated

Our heartiest felicitations are extended to the publishers of the *Journal* and to its editors and contributors May they continue to carry their high standards through the years to come

* Much Ado About Nothing

What's in a Name?

We read of the formation in a nearby state of "The Anti-Medical Trust League"*. The aims of this new "educational" organization are "to educate the public as to how the medical trust seeks to gain control over children in schools, health and educational boards as well as private agencies to effect abolition of medical trust control over chiropractors and drugless practitioners to advance, promote and protect philosophy, science, art and practice of chiropractic and drugless methods of healing "

Chiropractors and drugless healers aver that we are a trust

"Things are seldom what they seem

"Skim milk masquerades as cream "†

Oliver Garceau, writing in the *Public Opinion Quarterly* for September, 1940,** alleges that, through the medical press, group sanctions, expulsions, boycott, and its politicians, organized medicine molds the opinions of the nation's doctors Mr Garceau is an instructor in government at Harvard and, like a bloodhound, follows the spoor and scent of this sinister organization (medicine, not Harvard) unerringly through twenty pages of swampy reading matter, all set about with fever trees, to its lair on page 428 Here, panting, he finds "the essence of the process (of moulding the opinion of the nation's doctors) is that familiar combination of the pen, the sword and the old-fashioned politician "

* *Modern Medicine*, October 1940

† *H M S Pinafore*

** Vol 4 No 3 p 408

To all of these drugless healers, chiropractors, government, and Mr Garceau we say Ain't nature wonderful? Especially human nature Here we have been thinking and acting all these years as though we were physicians, while all the time we were merely kidding ourselves. Just a bunch of ordinary run-of-the-mill monopolists, pen wielders, sword forgers, and old-fashioned politicians after all! What a surprise this will be to a great number of very earnest and sincere men who have spent their lives, day and night, healing the sick, comforting the dying, encouraging the well to stay well in spite of sickness insurance and other discouragements! As we said Ain't nature wonderful? Especially human nature! And more especially still, good nature!"

We Help a Neighbor

Why, asks the *New York Times* editorially on October 29, 1940, were so many men rejected who applied during the past summer for enlistment in the Southern New York District of the Second Corps Area? Answering its own question, the *Times* states that these men were rejected because of serious physical defects As a good newspaper should be, the *Times* is genuinely concerned that this state of things exists Seeking the possible reasons, the editorial concludes "that (1) despite the striking advance in medicine, (2) despite all the educational work done by socially minded committees of citizens and private and public health associations, (3) Americans have remained strikingly indifferent to their own well-being" Then, plaintively, this modern Diogenes, his lantern guttering, asks "Why this is so is beyond us to divine "

Now ordinarily divination is a little out of our line We prefer to adhere to the facts of life But here is a neighbor in trouble, his diviner has broken down at a critical time, and never let it be said that we refused help to an honest inquirer in distress The facts are that in spite of all the educational work that has been done on Americans they have remained strikingly indifferent to their own well-being "Now," we asked our diviner, "Why is this so?" For quite a while the rusty old mechanism just groaned and wheezed Finally a voice speaking in Attic Greek (which we translate) mumbled something to the effect that "you can lead a horse to water but " and then faded away Again we heard only gear noises for a while, then "Aesop speaking human nature about the same See my fable of the cock and the pearl, quote Precious things are for those that can prize them Also fable of Hercules and the waggoner The gods help those who help themselves unquote stop " After this our diviner, too, quit

Perhaps this will be of help We offer it for what it is worth
 If it means anything at all our interpretation is that Americans
 have got too many other things with chattel mortgages on them
 to worry over They don't give a damn about their well-being
 Let the government take care of it

Call on us any time We're always glad to help a neighbor out

Sulfanilyl-Sulfanilamide

As each new derivative of sulfanilamide is brought forth, it is soon followed by a number of clinical reports based upon its use in a variety of diseases During the early development of this form of chemotherapy, it was necessary to temper sometimes unwarranted enthusiasms by repeated editorial caution Now that the glamour of its use has worn off, reportorial comments on sulfanilamide and its by-products can, by and large, be relied upon to be mature, factual, and uncolored by wishful thinking

In the treatment of gonorrhea, for example, the first glowing reports of the cures obtained with sulfanilamide were soon followed by others that detailed the failures What the profession was witnessing was the normal movement of a pendulum of zeal in its arc of vibration Now appear the observations of Alexander, Forbes, and Holloman¹ and of Hunt,² which point to the advantage of sulfanilyl-sulfanilamide over the parent compound The former obtained cures in 95 of 100 men with gonorrhea who

were treated unsuccessfully with sulfanilamide, while the latter stresses the superiority of this new derivative

An important observation by Alexander, *et al*, is, that it is advisable to delay chemotherapy for about ten days after the onset of the illness to obtain a period of optimum "therapeutic maturity" While local medication should be started early, one can render gonorrhea resistant to the sulfanilamide group if these drugs are administered from the onset. They consider that their high percentage of cures was the result of interrupted therapy Dosage of 0.3 Gm orally four times daily for five days, followed by an equal period of rest, is their recommended procedure Sulfanilyl-sulfanilamide appears to be less toxic, better tolerated, and more effective per unit of medication

However, since minor effects of toxicity are reported by Hunt in nearly all of his cases, we must still hold to our opinion that these drugs should not be given to ambulatory patients A "minor effect" of "dizziness and weakness" occurring while crossing a busy thoroughfare might possibly lead to a *major incident*

¹ Alexander J. C. Forbes, M. A. and Holloman A. L. *Am. J. Syph. Gonorr. & Ven. Dis.* 24: 234 (Mar.) 1940

² Hunt, G. C. *Illinois M. J.* 78: 183 (Aug.) 1940

Annual Registration in New York State

This is to remind all the members, indeed all licensed physicians in New York State who may read this notice, that if their registration cards with checks for the \$2.00 fee are not received in the Division of Professional Education at Albany by January 1, 1941, they will be subject to fines for the delay Under the law, the fine is \$1.00 for each thirty days or part thereof

COUNCIL COMMITTEE ON PUBLIC RELATIONS AND ECONOMICS

DOCTORS . GREECE NEEDS OUR AID

IN VIEW of the fact that the present European War is spreading to Greece—the land which is considered the cradle of modern civilization—it is only proper and humanly justifiable that the fighting soldiers and civil population in that country should be helped materially in their just cause. To this effect a "Greek-American Medical Committee for War Relief and Aid to Greece" is being formed. Throughout the United States and Canada the Greek-Americans and friends of Greece have already begun to raise funds to procure the materials which are so vital to this little kingdom, as its critical moment is unfortunately not very far ahead. The Committee hopes to realize its plan to send the following

3 Small complete mobile hospital units	Hematinics
25 Red Cross Ambulances	Hemostatics
3 Red Cross Transport Airplanes	Cardiac and circulatory stimulants
Concentrated accessory food preparations for (a) soldiers in active service and (b) civil population	Antiseptics (iodine) and narcotics
Antitoxins, antibacterial sera, and vaccines	Quinine preparations
	Chemicals—(a) phenobarbital, (b) sulfapyridine, (c) sulfathiazole
	Dry or liquid blood plasma
	Bandages and instruments

It is hardly necessary to remind our readers that it is impossible for Greece to import supplies from any European country and that whatever help does come can come only from America. Let us hope that the medical men who have taken the ancient oath will help, as best they can, the above voluntary nonpolitical organization in preserving the independence of the birthplace and country of Hippocrates.

Whatever you have to contribute would be gratefully received at the temporary headquarters of the Committee

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New York City

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1941 ANNUAL MEETING

Attention is called to the change in dates for the 1941 Annual Meeting of the Medical Society of the State of New York. It will be—and this is final—on April 28, 29, 30, and May 1, in Buffalo, at the Hotel Statler.

DEVELOPMENT OF VOLUNTARY HEALTH INSURANCE IN THE UNITED STATES

DONALD K. FREEDMAN, M D,* and ELINOR B HARVEY, M D, New York City

(From the Associated Hospital Service of New York)

THE existence of numerous and diverse voluntary health plans in the United States testifies to the presence of problems of medical care. As stated by the President's Technical Committee on Medical Care, in 1938, these problems, representing "the debit side of the ledger," fall in four categories¹ (1) insufficient preventive health services, (2) inadequate hospital facilities, (3) absence of or inadequate general medical service, and (4) wage loss and debts incurred due to illness. There is sufficient statistical evidence² to prove the existence of these problems. We can, therefore, turn our attention to the even more vital question of the means for solving them.

One method of solving the medical care problem, in part, is through voluntary health insurance plans. A historical study of this movement in the United States is helpful. Closely linked to this history are the vast changes in social and economic conditions that have occurred in the past 150 years. A review of the background and the tendencies of the medical programs of this era reveals unmistakable signs of the forms such programs may be expected to take in the future.

Voluntary health insurance³ may be described as an elective scheme through which protection is sought against the economic hazards of illness. The *Encyclopedia Britannica* defines the word insurance as "a provision made by a group of persons, each singly in danger of some loss, the incidence of which cannot be foreseen, such that when such loss shall occur to any one of them it shall be

distributed over the whole group." However, it is not a "program or a plan worked out and adopted. It is a result of certain lines of social evolution, a combination and adaptation of existing institutions, shaped by the varying pressure of all the social forces existing at the time. All insurance is but a phase of the eternal human search for security."³

Recent studies reveal that one-third of the population of this country earn \$800 a year and less, a sum barely sufficient to sustain them from day to day. According to the National Health Survey, "sickness occurs more often and with greater severity among the poor."⁴ In many rural areas "hospital facilities are limited" and there is "difficulty in obtaining adequate medical care."⁴ How, then, can those in the low-income group cope with the problem of medical needs? Obviously, any elective plan for medical care where voluntary contributions are necessary is incompatible with the financial status of this group.

However, in reviewing the origins of voluntary health plans, it is evident that they started in a class of individuals slightly above the medically indigent class. Toward the end of the eighteenth century, it was realized by some in this group that illness costs could be met by attacking the problem upon a group basis with equal participation by all members of the group.* Thus was found an aid in eliminating the pauper-charity relationship in illness. This was the beginning of voluntary health insurance in the United States.

First Period Fraternal and Mutual Benevolent Societies

A review of the literature indicates

* Assistant medical director.
† Distinct from this movement is the so-called voluntary health service. It is tantamount to a nonofficial public health organization and is therefore, not included in this paper. Cf. Report of the Committee on Public Health Organization, White House Conference on Child Health and Protection, Public Health Organization.

*Example. The Free African Society founded in 1787. page 1700

three important periods in the growth of voluntary health plans. Obviously there are no set delimitations for each period and all necessarily overlap.

Fraternal Societies—The first period is typified by the development of mutual benevolent associations and fraternal societies.* According to some authorities,⁵ the Masonic order had its inception among Negroes in 1784. In Philadelphia, these freed Negroes naturally banded together into social and religious groups. The value of mutual aid in times of illness soon became apparent. Both mutual aid societies and fraternal orders at first provided cash benefits during illness. The fraternal orders, such as the Masons, soon developed the institution of the "lodge doctor," that is, a physician who gave lodge members and their families medical care at reduced rates. The pre-Civil War period in the South witnessed the rise of many local fraternal orders which supplied, in some instances, case benefits for doctor, funeral, laundry, and nursing expenses. The godfather of modern fraternal beneficial societies is the Ancient Order of United Workmen. This was founded by a worker named "Father" Upchurch, at Meadville, Pennsylvania, in 1868.⁶

One of the highlights of this period of growth of fraternal health benefit plans came in 1886 when the first national convention of the Ancient Order of United Workmen was called in Washington, D. C. This Congress declared the following to be distinctive features of a fraternal beneficial society:⁶ "(4) fraternal assistance to living members in sickness and destitution, (5) payment of benefits to living members for total physical disability." This Congress represented over 500,000 members with insurance of one billion dollars. By 1931, a total of 123 fraternal societies were listed with assets of \$750,000,000. The preceding year, these societies paid \$12,000,000 in claims for accidents, sickness, and permanent disability.

* The growth of mutual benevolent associations and fraternal societies occurred side by side and over the same period; therefore both are included in the first period.

Mutual Benevolent Associations—With the foundation of the Free African Society in 1787 by Richard Allen and Absalom Jones, Negro freedmen, we see the "first manifestation of economic cooperation among Negroes" resulting in group protection.⁵ This Philadelphia organization was formed to furnish sickness and death benefits. Both fees and benefits were small, and the group soon became a religious one, its existence serving as a precursor of an African Insurance Company which was formed in 1810 in Philadelphia.

Between 1793 and 1867 there were about 38,000 mutual benevolent societies formed. As Dr. Sinai says, "While the majority of existing societies were formed within the past century, they inherited the ancient tradition of self-governing autonomous associations of workers, formed for the purpose of mutual assistance in time of emergency." This becomes more significant in view of the fact "that the present position of these societies in the system of insurance is due far more to historical than to logical reasons. The creation of the world-market removed much of the terror of local natural calamities but replaced them by a series of social and economic calamities. Relief from such social calamities was naturally sought in social institutions."³

In the mad scramble of industrial growth, except for those sparse areas of public medical care,⁷ the health of the majority of the population was generally handled on an individualistic basis, the mutual aid societies could not solve the problem. By 1867, 14,000 of the societies formed had collapsed because of "mismanagement, insolvencies, dissolution,"⁸ although attempts had been made to check their disintegration. An improved system of accounting was introduced and was followed by periodical valuations. In 1819 a law was passed in Philadelphia requiring justices not to confirm any tables unless approved by two actuaries or "persons skilled in calculation." Up to this time any individual could form a beneficial society at will.

The development of standardization quickly followed, with the creation of the registrar of friendly societies in 1846 and the requirement in 1850 of annual returns. Some of the states passed enabling legislation at this time,⁹ thus restricting the ease with which societies were previously formed. By 1856 the first American report was issued by the Massachusetts Commissioner of Insurance. From that time to the present the mutual aid societies have been on a much sounder basis legally and financially so that an upswing in popularity occurred. By 1900 there were 2,500,000 members with insurance of over \$4,008,000,000 and \$38,000,000 in benefits.⁹

By the end of the nineteenth century, it was evident from the past successes and failures of the various mutual benefit associations that even more definite standards were necessary for associations of this sort to be successful.¹⁰

One of the most outstanding of the mutual benevolent societies is the French Mutual Benevolent Society founded in San Francisco in 1851 and functioning successfully ever since.¹¹

The mutual benefit associations were a means of providing cash benefits in times of illness and, frequently, medical care as well. They revealed the necessity for legislation and standardization to ensure success. In addition, they provided a background and a source of experience for the plans to come, some of which incorporated the good qualities of the mutual aid societies. Eventually they became a force for education in industrial hygiene.

Second Period of Development

Union and Industrial Plans—The development of voluntary health plans during the second period follows closely the growth of unions and the steadily increasing industrialization of the nation, with the consequent crowding of the population into cities and industrial towns. Unions formed as a result of the division of labor, specialization, and expanding industry, which resulted in a diminution of independent producers

and an increase in the number of workmen dependent on a wage. This class, with their common interests and a realization of the inevitability of the changes, grouped together, therefore, originally for pleasure and shortly thereafter to formulate plans of action. Thus, the basis for permanent associations began to develop.¹²

Although there had been local unions as early as 1700, it was not until after the Knights of St. Crispin organized in 1867 at Milwaukee that unions became concerned with the problems of hours, wages, substandard workers and working conditions on a large scale.¹³ Even though unions were becoming more firmly established toward the end of the nineteenth century, health problems were either poorly handled or not even taken into consideration. One of the earliest health plans formed by a union was the inauguration of a cash benefit plan during illness by several local chapters of the International Ladies' Garment Workers Union in 1913. The fee for membership in this plan was a small one, paid in addition to the regular union dues. Membership involved a medical examination prior to joining and certification by a physician in case of illness.¹⁴ Nevertheless, even in 1916, very few trade unions supplied medical care,¹⁴ although many did supply cash benefits during sickness.

Even where the employees had not as yet formed unions, they did occasionally unite in the formation of health plans. One of the best organized and earliest of the health associations formed by employees is the Northern Pacific Beneficial Association, which was originated by the workers of the Northern Pacific Railway Express Agency. It is owned and operated by the members who pay 1 per cent of their earnings monthly for hospital and medical care and have free choice of staff physicians. Four general hospitals and one emergency hospital are maintained by the Association.¹⁵

The employers, in the face of rising unionism, began to hire full-time physicians and also encouraged the forma-

tion of mutual benefit associations in their firms, so that by the early 1900's these associations were becoming firmly entrenched in industrial groups. Originally, these societies supplied only sickness and death benefits, but eventually some of them also provided medical and hospital care. In the first part of the twentieth century, these organizations began to sponsor education in industrial hygiene.

College and University Health Plans — These had their inception during this second period. An element of compulsion is present in that all students must join if the institution has such a plan. The beginning of the present century witnessed the start of college health plans at the University of California under the guidance of the late Dr. George Frederick Reinhardt.¹⁵ Complete care except for surgical services was rendered. The University of Michigan Student Health Service,¹⁶ started in 1913, supplies complete medical service for the student body for a fixed annual fee of approximately \$15. Services of this sort are provided now at more than 150 colleges and universities throughout the United States.

Third Period Trends Since the First World War

The greatest activity in the field of voluntary plans has occurred within the past twenty years. This period constitutes, generally, the third in the historical development of cooperation for purposes of health protection by insurance, but by no means can it be sharply separated from the second period which included many of the plans now in use in a less highly developed form.

Just previous to and during the World War, those most interested in the economic problems of health were engaged in a campaign for compulsory health insurance.¹⁷ Several state commissions were formed to study the problems involved. In 1915 a committee of the American Medical Association cooperated with the American Association for Labor Legislation in preparing the "Standard Bill," a comprehensive health

insurance program.¹⁸ This was introduced in a number of state legislatures, but few advanced beyond the committee stage, although the standard compulsory health insurance bill was adopted by the New York State Senate in 1919. Following the end of the War, the movement gradually weakened because of severe opposition, while the voluntary health insurance movement began to gain momentum.

Wartime discoveries in the fields of medicine and surgery began to be applied widely. New diagnostic and therapeutic equipment was discovered, accompanied by the growth of specialization in medicine. The effect was an increasingly complicated problem in medical economics. There was a gradual increase in longevity, thus augmenting the number of those with chronic illnesses. The care of these conditions plus the increased expense attached to the care of illness became too costly for millions of persons in the low-income group. The depression not only augmented the low income group, but created a critical situation in the field of hospital finance as well as medical economics, compelling the closure of many hospitals, forcing doctors onto relief, and bringing into sharper contrast the inadequacy of proper medical care.

Following the World War, new plans for medical care grew more quickly due to the passage of workmen's compensation laws and the increasing interest of the unions and employers. For the most part, these plans were formed in industrial groups and were of several types: those supported by the employees, as the Stanacola Employees' Medical and Hospital Association in Baton Rouge, Louisiana, or those supported by joint contributions from both employees and employers, as in the case of the Roanoke Rapids Community Service, Roanoke Rapids, North Carolina, and occasionally those supported by the employer solely, as in the unusual Endicott-Johnson Corporation Workers' Medical and Relief Department in Johnson City, New York.¹¹ A description of one supplies

an understanding of the mechanism of the majority, since the differences usually relate to the amount of services available, type and source of payment, groups protected, and the groups in charge

An example of the employee or consumer type of plan* is that at Baton Rouge. Stanacola was formed in 1924 by a group of 2,200 employees of the Standard Oil Company of Louisiana.¹¹ Membership is voluntary but restricted to white employees. The dues are \$3.00 per month collected by the payroll deduction method. The medical staff, consisting of general practitioners and specialists, was selected by a vote of the membership from the Baton Rouge physicians. Doctors are on a full-time basis, receiving, on the average, \$6,000 per year at the present time. A board of directors is elected by the membership. The organization was incorporated on October 27, 1930, under the laws of the state as a nonprofit group. There is free choice of physician within the group, and practically all laboratory work, treatments, nursing service, and ward care are included, except for dental work and x-rays. Plans of this type, although varied in many details, predominated the field. With no standardization, each plan was based on the experience of other groups or on a trial and error method, adjusting rates upward, adding compulsion features, and building hospitals or clinics as the necessities required and the funds became available.

The unions, even at this time, had no comprehensive health plans of their own for their members. Several local chapters developed plans on their own initiative. In 1919 a group of labor unions in New York City cooperated in the formation of a dental clinic. This was called the Union Health Center, providing reduced rates for union members. But it was not on an insurance principle. Actually, it was an extension of the cash benefit system which had been instituted by

the International Ladies' Garment Workers Union in 1913.

By 1928 the Union Health Center added medical care to its services, with six clinic doctors for the use especially of the Garment Workers Union in New York City. The New York Board of Welfare granted the Health Center a charter in 1930. After a trying period in the early years of the depression, the Union Health Center was placed completely under the responsibility of the union in 1934. The clinic has expanded in size and value and now represents one of the best examples of a union voluntary health plan.

On the whole, unions have been slow in developing medical care plans. By 1932 there were only six unions that provided partial or complete care. The New York Letter Carriers' Association, Empire Branch No. 36,¹² with four thousand members is one that has been supplying medical care and examinations at the rate of \$6.00 per year, with special arrangements for care in five large hospitals in New York City.

One of the most significant movements in this entire period is the activity of the so-called "producers of medical care"—the doctors. Particularly in the past ten years, the individual physicians, local medical societies, and the American Medical Association have become seriously concerned with the economics of medicine which so vitally affects them as well as those whom they serve. Since 1920 doctors have been initiating various methods for supplying better medical care, often at less expense to the individuals or groups involved but generally not on a prepayment basis. Very few group clinics existed before 1918—that is, four out of the thirty clinics studied by C. Rufus Rorem.²⁰ Six of this group were founded between 1918 and 1923 and six between 1923 and 1928. One of the earliest founded that has had a successful experience is the Nicollet Clinic in Minneapolis,²¹ formed in January, 1921, after a year of preliminary work.

A more recently formed clinic is the Ross-Loos Medical Group,¹¹ organized

*By the consumer type of plan is meant one controlled and operated by the consumers of medical care in this case, the employees.

toward the end of the 1920's by Dr Donald E Ross and Dr H Clifford Loos as a partnership under the California laws. Employed groups principally are enrolled for service, and payments are made directly through the groups.* Services to enrolled members now cost \$2.50 per month and include practically complete medical, surgical, and hospital care. By 1938 this group had enrolled 20,000 members, representing 60,000 individuals including dependents. Forty salaried physicians with fifteen affiliated practitioners constitute the staff. At the present writing, plans are under way for establishing an affiliate clinic enrolling a group of several thousand in San Francisco.†

By 1937 there were reported "approximately two hundred private clinics, ranging in size of membership from three to twenty practitioners,"²⁰ located chiefly in the central, the southwestern, and the western states. Generally smaller than the Ross-Loos Clinic, they nevertheless provide more or less complete care, but not all are of the prepayment plan type.

Following a period of considerable lethargy and even opposition in many cases (Ross-Loos, Stanacola, Group Health Association Inc in Washington, D C, etc.), the county medical societies in many localities have gradually come to realize that the number of persons financially able to afford a private doctor is diminishing annually.²² Inasmuch as "the income of the physician is largely dependent upon the incomes of his patients"²² and since this income has been decreasing since 1929, the physician's income has also been falling. As a result, the lowest income group of the population receives 50 per cent as many days hospitalization and 41 per cent as many calls from doctors as those in the highest income group.²³ Hoping to stave off any government participation in medical care, county medical societies in many parts of the country have proposed or initiated plans that purport to give medical care

at reduced rates to those unable to afford the usual costs. Each plan has evolved according to local needs and often functions in conjunction with the welfare agency or other established investigative groups. The differences affect chiefly the number of doctors on the "panel," costs to members, administrative agency, extent and type of care given, and income group accepted.

The initial interest shown by medical societies occurred on the West Coast as early as 1933. The Pierce County Industrial Medical Bureau at Tacoma and the Yakima County Medical Bureau¹¹ were among the first formed by their respective county medical societies during 1933. Representative of the many similar plans in the West is the Kings County Medical Service Bureau¹¹ in Seattle, Washington, which offers free choice from among its three hundred practitioners to the thousands of employed members. Sponsored by the Washington State Medical Society, this nonprofit plan is administered by a medical bureau. Rates range from \$1.20 to \$3.50 per month, doctors' services being paid for on the basis of a fee schedule by the bureau.

After these plans had been in operation, the Medical Economic Security Project, which was neither a prepayment nor an insurance plan, was instituted at the end of 1934 by the District of Columbia Medical Society. Here again was simply an attempt at cooperation between doctors, hospitals, and social agencies in order to arrange for medical and hospital fees commensurate with the ability of the patient to pay.¹¹

Proprietary Plans—There arose, toward 1930, the proprietary medical insurance associations²⁴ which have attempted to furnish health insurance for profit on a periodic prepayment basis. There is little standardization, with some companies purchasing medical care from doctors by means of a fee schedule while others contract with practitioners or hospitals at fixed rates per month or year. As an example, the Columbia Casualty Company pays its physicians on a unit basis.

* Payments generally may be of three types: (1) fee for service; (2) payroll deduction; (3) fixed payment.

† Speech by Dr. Loos at the first annual convention of group health plans, July 1939, New York City.

Hospitalization Plans—There occurred at this time a distinct but closely related problem of equal magnitude. Not only had the pressing question of doctors' expenses become acute, but in addition, as has been pointed out before, the \$1,500,000,000 capital investment in nongovernment hospitals was quickly approaching a critical stage. Occupancy of hospital beds had "increased in recent years from 81 per cent in 1927 to 89 per cent in 1931" in government hospitals, while the occupancy of voluntary hospital beds had diminished from 65 per cent in 1927 to 62 per cent in 1931.²⁵ Both outpatient services and competition for patients increased with the construction of new hospitals established by donors and religious and national groups. Both private and hospital incomes diminished. The investment in voluntary hospitals was "now at stake."

As a result of this situation, individual hospitals attempted various methods in order to attain financial stability. The Highland Park Hospital Association in 1932 started an annual "drive" for funds, allowing credit on hospital bills equal to the contributions.¹¹ But, by and large, hospitals suffered financially for many reasons. New expensive equipment, rising costs, diminishing number of pay patients, falling off in contributions, all aided in the collapse of many hospitals and in expediting the virtual collapse of others.

In 1930 Baylor University Hospital made arrangements with a group of teachers whereby hospital care would be provided in return for a fixed monthly payment. With this as the point of departure, hospitals were quick in realizing the possibilities of such an agreement with its opportunity of filling empty beds. Within a period of four to five years the idea spread rapidly. The impetus was given to the movement in February, 1933, when the American Hospital Association gave its approval to the principle. Thus officially sponsored and generally safeguarded in some states by the State Insurance Laws, as in New York, there appeared to be no limitation but the size

of the group capable of enrolling. In numbers, the plans grew from 54,000 members in 1934 to 3,500,000 in July, 1939.

A typical example is the largest in the country at present—the Associated Hospital Service of New York organized in 1935. The history of this plan shows the period of growth and expansion with increasing popularity, then the period of abuse by the subscribers who demanded admission to hospitals for many minor ailments which would ordinarily not require hospitalization, and finally a period of relatively strict enforcement of the contract and the formation of a Medical Review Board to decide on the eligibility of all claims. The future holds plans for ward care at reduced rates for those in the low-income groups.

Present Status of Voluntary Health Insurance

Within the past two or three years and especially since the National Health Conference of 1938, the public has become more aware of the economic problems of health than at any previous period. Industry is beginning to realize the value of the health of the workers. Employers are aiding somewhat in the formation of voluntary health plans for the protection of the workers.

With the startling growth of industrial unions following the formation of the Committee for Industrial Organization through the efforts of John L. Lewis in 1935,²⁶ there ensued a vivid interest in the health of the members. Locals were encouraged to formulate health programs and plans. In the Appalachian bituminous coal fields, the miners "through their union have been trying to improve

conditions, with varying degrees of success."²⁷ Various local chapters of the United Mine Workers of America in West Virginia have supported important changes in the state laws. During the middle of 1939, the Transport Workers Union in New York City instituted a complete medical care program for its members. Throughout the country there is a drive for more healthful working con-

ditions and protection against prohibitive illness costs

The cooperative medicine movement* is another recent development in this rapidly changing scene. Inaugurated in 1936 by Dr. Kingsley Roberts, the Bureau of Cooperative Medicine has become the champion of cooperative health in America and the rallying point for many sound ventures into the field. Recently the Bureau was instrumental in forming the Association of Medical Cooperatives, which includes among its fourteen members Group Health Association Inc. of Washington, D. C., Farmers' Union Cooperative Hospital Association, and numerous other cooperative or voluntary medical care plans. The first national conference of group health plans was held on July 20, 1939, at which time steps were taken for the formation of a national organization of these plans, including the cooperatives.

While group practice is still being opposed by organized medicine, county medical societies are proposing various alternative plans as mentioned above.

Summary

1 The development of mutual benevolent associations and fraternal societies constituted the first sustained movement of voluntary health insurance in the United States during the initial period from 1780 to 1880. This type of insurance, then, is already 160 years old in our country.

2 Unions and industrial groups with their health programs were the chief groups working for health protection in the second period from 1880 on and extending to the present.

3 The third period of development starting about 1920 resulted in the rapid formation of several hundreds of health plans, with many varying types being attempted chiefly by physicians, employed groups of the population, combinations of both, and industrial concerns and true cooperatives.

4. At the present time group practice is becoming more common throughout the country, particularly in the West. The medical profession is awakening to the need for better distribution of medical services.

5 Voluntary hospitals facing a financial crisis have, in many instances, been saved from collapse by the numerous hospitalization insurance plans now in operation. Three and one-half million people, many of whom were formerly unable to meet hospital expenses, are now insured against the major bills likely to arise therefrom.

Conclusions

The development of voluntary health plans in the past twenty-five years has been rapid, haphazard, and individualistic. However, as early as 1916, it was realized that some method was "needed of placing these resources [of modern medicine] upon a sound financial basis and throwing them open to the masses of the people."²⁸ Health security has grown out of a social necessity born during the era of industrialization and made more urgent with the development of specialization. Criticized by some as an unnecessary step in the evolution of medical care since "the logical plan would be to adopt the method to which European countries have come through experience—that is, a compulsory plan under governmental control"²⁹—others have felt that "even though it be true that voluntary insurance will sooner or later lead to compulsion, it does not necessarily follow that it should be refused a trial."³⁰ Further, from the experience gained from voluntary health plans we may learn "at just what levels some form of compulsion must be exercised."³¹

Voluntary sickness insurance has not turned out to be a cure-all for our health problems. Some plans have been inefficiently administered. Others have had unwise financial backing. Still others have been opposed by the profession. Some members of group practice plans were forced to choose between continuing in the group and being ex-

* The four cardinal principles of cooperative medicine, according to Dr. M. Shadid are: (1) group medical practice (2) periodic prepayment (3) consumer cooperative control (4) preventive medicine.

pelled from the county medical societies Voluntary health insurance has thus encountered great obstacles. The Committee on the Costs of Medical Care suggested "that the costs of medical care be placed on a group payment basis, through the use of insurance, taxation, or both of these methods."

Voluntary insurance plans are enrolling more individuals and groups every year. Gradually, these subscribers are receiving that security and freedom from the dread of sickness bills which has been sought for years. In addition, the experiences gathered under the present circumstances will serve both physicians and laymen as valuable orientation to compulsory health insurance if this should prove feasible.

Whatever the outcome in their relatively brief existence as important factors in the growth of health security in the United States, the voluntary plans have definitely proved their value. So firmly are they entrenched, as in some industrial plans and in some of the producer or cooperative groups, that it is questionable whether voluntary health insurance plans will disappear completely, even in the face of an approaching compulsory insurance and an enlarged public medical service or in their presence. As stated by the Technical Committee on Medical Care, these procedures "are not mutually exclusive. On the contrary, each may have substantial advantages for particular areas or for particular portions of the population to be served."²⁰

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EXAMINATION—AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY

The written examination and review of case histories (Part I) for Group B candidates will be held in the various cities of the United States and Canada on Saturday, January 4, 1941, at 2:00 P.M. Formal notice of the place of examination will be sent each candidate several weeks in advance of the examination date. No candidate will be admitted to the examination whose fee has not been paid at the Secretary's Office. Candidates who successfully complete the Part I examination proceed automatically to the Part II examination; to be held in June, 1941.

The general oral and pathologic examinations (Part II) for all candidates (Groups A and B) will be conducted by the entire Board, meeting at Cleveland, Ohio, from May 28 to June 1, 1941, immediately prior to the opening of the

annual meeting of the American Medical Association.

Application for admission to Group A (Part II) examinations must be on file in the Secretary's Office not later than March 15, 1941.

After January 1, 1942 there will be only one classification of candidates, and all will be required to take Part I and Part II examinations.

The Board wishes to announce a modification of the case record ruling (effective January 1, 1942) as it appears in the September, 1940, issue of the Board booklet. This ruling should read:

"It is preferable that the number of cases submitted should not be more than half (25) of the total number of fifty (50) cases required."

For further information and application blanks, address Dr. Paul Titus, Secretary, 1015 Highland Building, Pittsburgh (6).

THE HAZARDS OF PREGNANCY AND LABOR IN THE "GRANDE MULTIPARA"

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(From the Department of Obstetrics, The Johns Hopkins University and Hospital)

THE French call a woman who has had 5 or more babies a "grande multipara." It is fitting that such a patient should have some special designation—not because, as we used to think, she represents an "easy obstetrical case" (one in which the only serious problem is to get there in time) but because she faces certain special dangers which are actually more grave than the primigravida encounters. It is the purpose of this paper to inquire into these particular hazards met by the grand multipara and to determine, if possible, how best to deal with them. To this end, a series of 45,514 consecutive obstetric cases has been reviewed, in which the pregnancy went to, or beyond, the stage of viability—that is, to a stage in which the baby weighed 1,500 Gm or more or measured 35 cm or longer. Abortions were excluded from the study because of the fact that a substantial proportion of these, beyond question, were criminally induced, a circumstance that would vitiate any conclusions drawn as to cause and effect.

As may be seen in Fig 1, 191 maternal deaths occurred in these 45,514 cases, a gross mortality rate of 4.20 deaths per thousand viable births. It is apparent from this chart that women who have previously had 8 or more children face a high mortality in childbearing. Whereas in the lower parity brackets (I to V) the maternal death rate ranges between 3.55 and 3.78 per thousand, it soars to 11.73 with a parity of 9 or more, a threefold increase. It would be of interest and of some practical importance to ascertain precisely at what parity this increase in death rate becomes manifest. Upon first consideration, it might seem possible to do this by breaking up the para VI-VIII

group into its constituent parties, but, with only 20 maternal deaths among these 4,783 cases, such a procedure would involve a considerable sampling error. If, however, this is done, the resultant figures are as follows: para VI, 2,017 cases, 7 maternal deaths, a maternal mortality of 3.47 deaths per thousand; para VII, 1,615 cases, 6 maternal deaths, a maternal mortality of 3.72 deaths per thousand; and para VIII, 1,151 cases, 7 maternal deaths, a maternal mortality of 6.08 per thousand. These figures suggest, then, that this increase in the risk of childbearing with increasing parity first becomes marked with the eighth child, but further observations will be necessary to establish this fact definitely. It seems clear beyond peradventure, however, that with the ninth pregnancy the hazards of childbearing are greatly increased over those met in the lower parity brackets. In passing, it is interesting to note that the effect of increasing parity on maternal mortality is not gradual in character but abrupt, the death rate remaining relatively constant until a parity of VIII or IX is reached, when it mounts rapidly to the high levels we have mentioned.

When we turn to the prognosis for the infant as it is affected by parity, it is evident from Fig 2 that the stillbirth rate with the ninth pregnancy and above is more than twice that encountered in the lower pregnancy brackets, I to V. The effect of grand multiparity on the neonatal death rate, as shown in Fig 3, is less striking, but, nevertheless, it is apparent that the likelihood of neonatal death with the ninth confinement and later is substantially greater than with any previous one.

Read by invitation at the Annual Meeting of the Medical Society of the State of New York, New York City, May 9, 1940

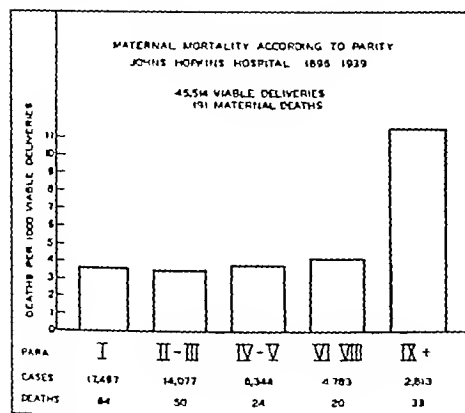


FIG 1

If it is granted, then, that the grand multipara, particularly the woman in her eighth or ninth pregnancy, faces a much greater maternal and fetal mortality than women in the lower parity groups, it becomes urgently important to inquire why. What are the factors responsible for the high toll which these women pay in childbearing?

It is widely recognized that the three most common causes of maternal death, in general, are first, puerperal infection, second, toxemia, and third, hemorrhage. When we investigate the causes of death in primiparas and in the other lower parity brackets, we find that this distribution of causes is altogether correct. For instance, among the 17,497 primiparas in our series, there were 64 maternal deaths, the common causes of which were as follows: puerperal infection, 17 cases, eclampsia, 14 cases, hemorrhage, 4 cases. The 4 deaths from hemorrhage comprised 2 cases of postpartum hemorrhage, 1 case of advanced ectopic pregnancy, and 1 case of placenta praevia. For reasons that will be apparent shortly, it should be noted that there was not a single case of rupture of the uterus among these 64 primiparous deaths. When we turn to the causes of death among our grand multiparas, we discover that an entirely different group of conditions is responsible. Thus, the 33 deaths in the para IX group were attributable to the following causes: rupture of the uterus, 10 cases, chronic

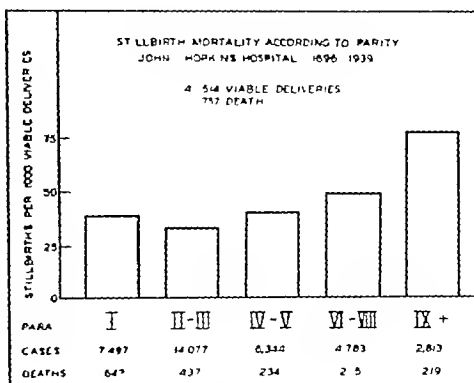


FIG 2

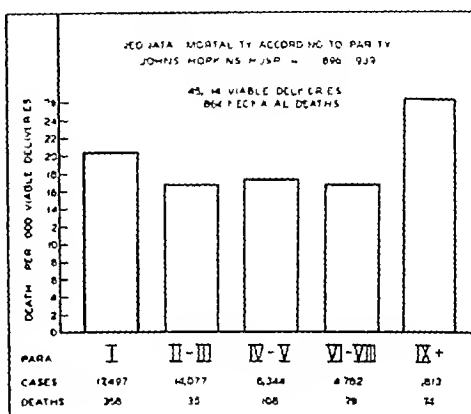


FIG 3

hypertensive vascular disease or chronic nephritis, 7 cases, and placenta praevia, 5 cases. Among the causes of these 33 deaths eclampsia does not appear at all and puerperal infection appears but once. Likewise, in the parity group VI-VIII, the common causes of death are decidedly different from those among the primiparas. Here, rupture of the uterus, placenta praevia, postpartum hemorrhage, and hypertensive vascular disease or chronic nephritis vie for first place, each being responsible for 3 of the 20 deaths. By adding these two groups of grand multiparas together, we have a total of 7,596 cases in which the parity was VI or greater. There were 53 maternal deaths, the more common causes of which were: rupture of the uterus, 13 cases, chronic hypertensive vascular disease or chronic nephritis, 10 cases, pla-

THE HAZARDS OF PREGNANCY AND LABOR IN THE "GRANDE MULTIPARA"

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THE French call a woman who has had 5 or more babies a "grande multipara." It is fitting that such a patient should have some special designation—not because, as we used to think, she represents an "easy obstetrical case" (one in which the only serious problem is to get there in time) but because she faces certain special dangers which are actually more grave than the primigravida encounters. It is the purpose of this paper to inquire into these particular hazards met by the grand multipara and to determine, if possible, how best to deal with them. To this end, a series of 45,514 consecutive obstetric cases has been reviewed, in which the pregnancy went to, or beyond, the stage of viability—that is, to a stage in which the baby weighed 1,500 Gm or more or measured 35 cm or longer. Abortions were excluded from the study because of the fact that a substantial proportion of these, beyond question, were criminally induced, a circumstance that would vitiate any conclusions drawn as to cause and effect.

As may be seen in Fig 1, 191 maternal deaths occurred in these 45,514 cases, a gross mortality rate of 4.20 deaths per thousand viable births. It is apparent from this chart that women who have previously had 8 or more children face a high mortality in childbearing. Whereas in the lower parity brackets (I to V) the maternal death rate ranges between 3.55 and 3.78 per thousand, it soars to 11.73 with a parity of 9 or more, a threefold increase. It would be of interest and of some practical importance to ascertain precisely at what parity this increase in death rate becomes manifest. Upon first consideration, it might seem possible to do this by breaking up the para VI–VIII

group into its constituent parities, but, with only 20 maternal deaths among these 4,783 cases, such a procedure would involve a considerable sampling error. If, however, this is done, the resultant figures are as follows: para VI, 2,017 cases, 7 maternal deaths, a maternal mortality of 3.47 deaths per thousand; para VII, 1,615 cases, 6 maternal deaths, a maternal mortality of 3.72 deaths per thousand; and para VIII, 1,151 cases, 7 maternal deaths, a maternal mortality of 6.08 per thousand. These figures suggest, then, that this increase in the risk of childbearing with increasing parity first becomes marked with the eighth child, but further observations will be necessary to establish this fact definitely. It seems clear beyond peradventure, however, that with the ninth pregnancy the hazards of childbearing are greatly increased over those met in the lower parity brackets. In passing, it is interesting to note that the effect of increasing parity on maternal mortality is not gradual in character but abrupt, the death rate remaining relatively constant until a parity of VIII or IX is reached, when it mounts rapidly to the high levels we have mentioned.

When we turn to the prognosis for the infant as it is affected by parity, it is evident from Fig 2 that the stillbirth rate with the ninth pregnancy and above is more than twice that encountered in the lower pregnancy brackets, I to V. The effect of grand multiparity on the neonatal death rate, as shown in Fig 3, is less striking, but, nevertheless, it is apparent that the likelihood of neonatal death with the ninth confinement and later is substantially greater than with any previous one.

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ties charged on birth certificates to postpartum hemorrhage actually belong in this group

Hypertensive Vascular Disease or Chronic Nephritis

The most common complication encountered in the grand multipara and the most frequent cause of death is probably hypertensive vascular disease or chronic nephritis. To be sure, in the present study it is listed second in order of frequency, but this is only because we have long followed the practice of interrupting pregnancy in patients with clear-cut examples of this disorder. Had these women been allowed to continue with pregnancy, it seems likely that the number of deaths in this group would have exceeded that in any other.

The clinical characteristics of hypertensive vascular disease are plain enough. Before the sixth month of pregnancy is reached, usually during the first half of gestation, the patient shows a marked elevation of blood pressure. As a rule, the hypertension has usually existed prior to pregnancy, if so, the early months of gestation bring about an increase in both the systolic and diastolic pressures. Albuminuria and abnormalities of the urinary sediment may be absent, the renal function is often normal, edema is lacking or minimal, and the patient has no complaints other than occasional headaches. But the hypertension persists, usually at a fairly constant level. At this time, only one other constant observation may be noted and that is narrowing and tortuosity of the retinal vessels—in other words, a retinal arteriosclerosis. The pregnancy may proceed to the expected date of confinement, or, as commonly occurs, the fetus may die in utero and be expelled prematurely. In either event, the child is underweight, while the placenta may show an unusual number of infarcts, often red infarcts. Following delivery, there may be a moderate recession in the blood pressure, but usually it remains indefinitely at a figure only slightly below that observed in pregnancy. Each gesta-

tion adds its increment to the hypertension, and, as a rule, the exacerbation in the blood pressure occurs earlier and earlier in each succeeding pregnancy.

The evidence is overwhelming that chronic hypertensive vascular disease is the result of a generalized arteriosclerosis, which sooner or later causes the death of the patient in one of three ways: hypertensive heart failure, nephritis with uremia, or apoplexy. The evidence is also clear that pregnancy aggravates the process. This is only to be expected, since pregnancy regularly imposes a 50 per cent increase in the minute output of the heart and a 50 per cent increase in the load which these stenosed vessels have to carry. Indeed, the presence of advanced hypertensive vascular disease in a grand multipara is often attributable to the fact that her already diseased arterial tree has been allowed to suffer the insult of pregnancy after pregnancy.

The appalling frequency of chronic hypertensive vascular disease (or chronic nephritis) in the upper parity brackets is clearly shown by the fact that in our experience 1 woman out of 5, in the parity groups VIII to IX, is affected with this disorder, with a parity of X or over, it occurs 1 in every third pregnancy and ten times as frequently as in primigravidae. This state of affairs stands in marked contrast to the parity distribution of eclampsia, which, of course, is essentially a disease of primigravidae.

Placenta Praevia

Placenta praevia is not only a disease of multiparity but one whose incidence increases in direct proportion to parity. In the group of para VIII and above, it is seen four and one-half times as frequently as in primiparas.

Other Handicaps

Quite apart from the three hazards mentioned (rupture of the uterus, hypertensive vascular disease, and placenta praevia), the grand multipara is often handicapped in other ways. Most notable of these is obesity, which increases markedly the dangers of childbearing, as

centa praevia, 8 cases Let us inquire further into these three conditions that represent such hazards to the grand multipara

Rupture of the Uterus

Our observations with regard to the frequency of rupture of the uterus in grand multiparas are in keeping with those reported by other authors For instance, in Davis' study¹ of 57 cases of rupture of the uterus (postcesarean cases excluded), approximately two-thirds of the patients were found to have a parity of IV or more, in an average clinic population not more than one-third fall into this advanced parity group Among our 13 deaths from rupture of the uterus, 10 were spontaneous ruptures and 3 were traumatic, it should be noted parenthetically that none of these represented rupture of a cesarean section scar In 7 of the 10 cases of spontaneous rupture of the uterus, the accident occurred within fifteen hours of the onset of labor

This high incidence of rupture of the uterus, after relatively short periods of labor, suggests that the uteri of these grand multiparas have undergone changes that make them peculiarly predisposed to this accident. Both Dawidoff² and Poroschin³ have shown that uteri which rupture spontaneously exhibit, as a rule, marked changes in the elastic tissue Dawidoff² demonstrated that the elastic tissue fibers in such cases show decided changes—thickening, shortening, as well as knotlike and spindle-like swellings Poroschin³ carefully studied the uterus from a case of spontaneous rupture, the patient was 45 years old and para XI The uterus was normal in thickness, and neither fatty, amyloid, nor hyaline degeneration was seen, muscle changes were entirely absent When, however, he attempted to study the elastic tissue, he found it entirely lacking except for a small quantity around the blood vessels Poroschin believes that cases of spontaneous rupture of the uterus are the result of a deficiency in elastic tissue, a condition which he, Dührssen, and others, regard as a senile change.

In this connection, it must be recalled that these multiparous uteri are frequently subjected to a greater tensile strain in pregnancy and labor, not only because the babies tend to be larger but also because they more often lie in abnormal positions With increasing multiparity a steady rise in the weight of the baby is manifest, the average multiparous child weighing about 200 Gm more than the first. When we reach a parity of VIII or IX, it usually weighs about 300 Gm more than the first born Transverse position of the baby, of course, is much more common in grand multiparas, and, when we come to a parity of X and over, the incidence of this complication is ten times that met in primigravidas Breech presentations are also more frequent in the upper parity groups Twin pregnancy is almost three times more common in grand multiparas Multiple gestation, it will be recalled, not only brings about increased distention of the uterus and sometimes introduces mechanical difficulties but predisposes to toxemia, anemia, and postpartum hemorrhage

It is important to remember that rupture of the uterus may occur without dramatic phenomena From an analysis of 12 cases of rupture of the uterus occurring at the Woman's Hospital in New York City, Seley⁴ reaches the conclusion that the classic picture of shock is to be expected in only one-third of noncesarean cases and rarely in patients whose cesarean scar ruptures During the past four years I have seen 3 cases of spontaneous rupture in apparently normal, grand multiparas after periods of labor that were less than twelve hours, and in 2 of the patients there was neither shock nor appreciable abdominal tenderness In the third case, a fatal one, bleeding and shock followed the spontaneous delivery of a large baby, the diagnosis was postpartum hemorrhage until postmortem exploration of the uterus revealed an extensive rupture It is my opinion that rupture of the uterus is a more common cause of maternal death than ordinarily believed and that not a few of the fatal-

CERTAIN EYE FACTORS IN THE PREVENTION OF MOTOR VEHICLE ACCIDENTS*

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ACCORDING to Bahn,¹ only 5 per cent of automobile accidents are directly traceable to imperfect eyes. However, visual defects or diseases or unusual emergencies that require rapid visual discrimination reaction time may force any one of the 45,000,000 drivers in this country into an accident.

Despite strict traffic laws and propaganda concerning highway safety, the number of deaths resulting from motor vehicle accidents in the United States is still high. According to vital statistics published by the Department of Commerce on July 12, 1939, provisional compilations of fatal accident statistics indicate that for the year 1938 there was a total of 32,428 deaths from motor vehicle accidents in the United States. This figure represents a decrease of 18 per cent from the 1937 figure of 39,643 deaths. From 1928 to 1937 there was a decrease of 21 per cent in the number of children killed in automobile accidents, but among the age group of from 15 to 24 years there was an increase of 62 per cent. In order to reduce the number of fatal accidents in this and other groups, every effort should be made to increase the safety of driving, which probably can be done, in part, through higher standards for licenses to drive motor vehicles. Standards for the eyes should be high but practical and somewhat flexible.

A study made in California showed that in San Francisco 20 per cent of all motorists involved in fatal accidents had an acuity of 20/30 or less in one eye. Further investigation revealed that in every case the accident occurred on the side of the eye with poor visual acuity and that the driver was unaware that visual acuity in one eye was deficient.² The examination of 70 drivers stopped for "cutting in" on Los Angeles highways showed that half of them had defective right eyes.³ Bedell⁴ reported that in New York State drivers with markedly de-

fective vision in one eye had an accident on the side with the better vision in 50 per cent of the cases and that the other 50 per cent were on the side of the poorer eye. He also stated that the cross section of operators and accidents was too small to even predicate a suggestion of a statistical formula.

It seems evident that special examining centers should be available in large cities for the study of all applicants with serious or borderline ocular defects and of all drivers involved in automobile accidents.

Because of the appalling slaughter or maiming of numbers of individuals and because of the fact that the eyes or the reacting mechanism initiated by the eyes is probably the most important single physical factor in causing accidents, it is evident that further consideration of this subject is of paramount importance.

Visual Standards for Drivers of Motor Vehicles

Before considering the individual ocular factors which are of importance in causing or preventing motor vehicle accidents, it may be well to outline briefly the visual acuity standards that have been suggested in the United States and in Europe (Table 1).

Visual acuity, although probably the most important factor, is only one of the many functions of the eyes which may be responsible for accidents. The ocular standards recommended to the American Medical Association⁵ in 1937 (Table 2) include some of these factors.

These excellent standards are more rigid than those proposed by the first committee of the American Medical Association⁶ appointed to formulate standards for drivers of motor vehicles. However because of practical considerations they may not be sufficiently high in certain respects, therefore, the following ocular standards (Tables 3 and 4) for unlimited and limited licenses are suggested for consideration. Although they may be too rigid or impossible to apply in certain sections of the country, the suggested methods of testing groups might permit the tests to be applied by the present examiners. These regulations may seem strict, but they do not seem so drastic when we realize that we may

* Aided by a grant from The Ophthalmological Foundation Inc.

Matthews and Der Brucke have recently emphasized. There are other hazards which might be mentioned, but enough has been said to make plain the common causes of maternal death in the upper parity groups.

Conclusions

It would now seem incumbent upon us to enumerate briefly how best to meet the problem of the grand multipara.

1. Because of the high maternal and fetal mortality associated with bearing the ninth child and above and in view of the transcendent value of such a mother to her family, it is believed that every woman who has had eight children should be offered contraceptive advice on the sole basis of grand multiparity. If contraception fails or if husband and wife earnestly desire it, sterilization is justifiable. We often carry this out (following delivery of the eighth child), on the first or second day of the puerperium, by the Pomeroy method under local anesthesia. We may note, parenthetically, that cesarean section is never indicated for the sole purpose of facilitating sterilization.

2. The childbearing career of multiparas with definite hypertensive vascular disease should be ended, even though they are in the lower parity brackets. Whether this is effected by contraception or by sterilization rests with the patient's

ability to use contraception effectively. If hypertensive vascular disease is encountered in a grand multipara during the first half of pregnancy, her best interests are usually served by interruption of the pregnancy and sterilization.

3. In view of the important role played by hemorrhagic conditions (rupture of the uterus and placenta praevia) in the maternal mortality of the upper parity brackets, facilities should be available for blood transfusion at the time of delivery. Ideally, such patients should be grouped and matched for transfusion at their first prenatal visit. If at all possible, these grand multiparas should be delivered in the hospital and not in their homes.

4. More important than these considerations, however, is the need for every practitioner of obstetrics to realize that the grand multipara does not represent an "easy obstetrical case" but, rather, one which calls for the utmost in alertness and judgment. If this be thoroughly understood, the fate of these women will be happier than it has been in the past.

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MARY PUTNAM JACOBI FELLOWSHIP

The Women's Medical Association of New York offers a Mary Putnam Jacobi Fellowship for medical research, of one thousand dollars (\$1,000), available October 1, 1941. It is open to any woman doctor, either American or foreign, who is a graduate of a reputable medical school.

Applications for this fellowship must be filed with the secretary of the committee by March 1, 1941, and must be accompanied by statements by persons other than the candidate as to (1) health, (2) educational qualifications, and (3) previous work. The applicant herself should state the problem she proposes to investigate and send her photograph. As it is not practicable for the secretary to write for letters about candidates, applicants should send with their applications sufficient data to enable the committee to judge their respective merits.

The recipient of the fellowship will be expected to give full time to the study of her problem and to make a report for publication at the completion of her research.

Application blanks may be obtained from the secretary of the committee.

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150 East 73rd St, New York, N Y

TABLE 3—PROPOSED MINIMUM OCULAR STANDARDS FOR UNLIMITED LICENSE

Visual Acuity	Visual Fields	Judgment of Distance	Color Vision	Light Sense	Binocular Vision	Motor Anomalies
20/40 in one eye with or without correcting lenses provided there is no active eye disease. 20/200 or better in the other eye	Field for motion to 70 degrees temporally in each eye as tested with a 5-mm test object and 7 foot-candles of illumination	Sufficiently accurate judgment of distance. All drivers should be able to touch a 20-mm white ball with another 20-mm white ball brought from above downward at a distance of 3 feet in four of five attempts	Normal perception of red, green and yellow (see text for suggested group test)	Drivers should have rapid adaptation to darkness after adaptation to light. The threshold for light difference should be normal (see text for method of testing groups of applicants)	Normal binocular vision at 6 M with the Worth test or one of its modifications ¹ or diplopia spectacles ²	Practically no observable movement with the screen test at 6 M if much movement is noted, the applicant should be examined with a 6-M stereoscope preferably a recording model

experienced the blinding effect of glaring headlights while driving at night, and they also know the disturbing effect of having the interior of the car lighted. Both of these conditions tend to raise the threshold for vision when illumination is low. Special glasses that are clear glass in part and have a low transmission in other parts, tinted celluloid strips for the windshield, and a partially tinted windshield are useful in diminishing the dangers from slow dark adaptation following glare. Glare is reduced from certain surfaces by polaroid spectacles. The more widespread use of polarized light for headlights and polarizing glass for windshields may eliminate much glare.¹⁵

(2) *Highway lighting by road lamps and automobile headlights* Another factor affecting visual acuity and which concerns safety in driving from the eye standpoint is that of highway lighting. Sherbaum¹⁶ reported that after installation of 400 and 600 candle-power lamps on 200-foot centers on 11 miles of highway from Absecon to Egg Harbor in New Jersey traffic increased 35 per cent in 1938 and fatal night accidents were eliminated during this period.

Roper and Howard's¹⁷ study of the relation between candle power and visibility distance indicates that the average driver perceives the unexpected obstacle only half as far away as one he anticipates seeing. They found that perception distance increases rapidly for the first few thousand candle power but more slowly at the higher values. Moreover, seeing distances increase materially when objects are light in color. Their tests of the effect of car speed on visibility distance show a marked decrease in perception distance with increasing car speeds. For the first few hundred glare-candle power, visibility is reduced rapidly but falls off less rapidly as candle power is further increased.¹⁷ They state that 1,000 candle power directed toward the driver is about the value from the well adjusted lower or meeting beam of modern

headlamps. It reduces the perception distance approximately one-third. These investigators found that 7,000 candle power reduces the distance by about two-thirds.

Roper and Howard¹⁷ suggest that there are four general approaches to the problem of providing proper road lighting and safe seeing for all drivers at night: (1) a single beam designed with a flat, sharp top and aimed to strike the road far enough ahead to provide safe seeing at slow speed but close enough to the car so as to limit glare, (2) one-way roads so that there are no opposing headlamps, (3) a single beam properly designed and aimed to provide safe seeing, combined with polarization or other means to limit the candle power directed toward the eyes of the approaching drivers, and (4) two or more headlighting beams—multiple beam practice.

(3) *Glasses* The importance of properly corrected vision cannot be overemphasized. The individual's ability to discern objects at a greater distance may be increased by the wearing of proper lenses. However, in patients with impaired light sense glasses may be less effective, especially at night, because light transmission is lessened by lenses and, when illumination is low, extramacular areas are more sensitive than the macula.

(4) *Road signs* Road signs with instructions for drivers as well as advertisements may be a cause of accidents because they divert the driver's attention. Instruction signs should be black on white or black on yellow because this type of sign is the most legible. If possible, diagrammatic signs should be used as these are more rapidly understood.

(5) *Visual fatigue* It should be more generally known that persons with normal vision can fail to register impressions on their brain when they are unduly fatigued. I observed a fellow ophthalmologist, whose eyes were open, drive directly at an oncoming car while passing a large

TABLE 1—A COMPARISON OF PRESENT VISUAL ACUITY STANDARDS FOR DRIVERS OF MOTOR VEHICLES*

Organization or State	Better Eye	Worse Eye	Unrestricted License				Restricted License
			Both Eyes with Glasses	Both Eyes Without Glasses	One-Eyed with Glasses	One-Eyed Without Glasses	
National Safety Council ¹	20/30	20/50				20/20	20/30 with correction
Europe	20/40	20/200					
Arkansas			20/50	20/30	20/30	20/20	
California			20/50	20/50	20/40	20/40	
Connecticut			20/40	20/40	20/30	20/30	
Delaware			20/40	20/30	20/20	20/20	
District of Columbia			20/40	20/40	Require a letter from eye physician		
Iowa			20/40	20/40	20/30	20/30	
Kansas			20/40	20/40	20/30	20/30	
Maine			20/50	20/30	20/30	20/20	
Maryland			20/70	20/70	20/40	20/40	
Massachusetts			20/70	20/70	20/70	20/70	
Nebraska			20/40	20/40	20/30	20/30	
New Jersey			20/50	20/50	20/50	20/50	
New York			20/40	20/40	20/40	20/40	
Oklahoma			20/50	20/30	20/30	20/20	
Oregon			20/60	20/60	20/40	20/40	
Rhode Island			20/60	20/65	20/20	20/20	
South Carolina			20/50	20/30	20/30	20/20	
Virginia			20/70	20/70	20/40	20/40	
Washington			20/50	20/50	20/50	20/50	

* Data on visual acuity required by states obtained from Public Safety Memo No 42, National Safety Council February, 1938

TABLE 2—OCULAR STANDARDS FOR DRIVERS OF MOTOR VEHICLES
(Special Committee of the American Medical Association, 1937)

Visual Acuity	Form Field	Minimum Visual Standards for Binocular Vision	Visual Standards for Licensure	Color Vision	Remarks
With or without glasses—20/40 Snellen in one eye and 20/100 Snellen in the other	Not less than 45 degrees to both sides laterally from point of fixation	Binocular single vision	Color Vision	Ability to distinguish red, green, and yellow	Glasses, when required, must be worn, and those employed in public transportation shall carry an extra pair
Visual Acuity	Field of Vision	Visual Standards for Limited License*	Motor Anomalies	Remarks	
Not less than 20/65 Snellen in the better eye	Not less than 125 degrees horizontally in one eye	No diplopia	Other personal qualifications that may compensate for minor defects of vision and that are necessary for efficient operation of a motor vehicle should rate high for those to whom a limited license is issued		

* A limited license is one which is issued with certain limitations concerning speed, night driving, etc.

be permitting persons to commit murder unless rigid regulations are enforced. A patient who had trachoma and scarring of the cornea and who had only one eye in which he had 20/70 vision was given a license to drive a truck. At dusk one evening he killed a child whom he did not see because of reduced vision with the lowered illumination.

1 Visual Acuity

An important factor in preventing accidents undoubtedly is normal visual acuity. Since visual acuity varies according to different states of health, the individual's momentary mental state, and varying conditions of illumination, it is important to have excellent visual acuity, the better visual acuity is, as a rule, the less affected it is by changes in physical, mental, and external conditions. Because one eye compensates for the defect of the other eye, most recommended

standards require high visual acuity or normal visual acuity in the remaining eye if one eye is blind or has been enucleated (see Tables 1, 2, 3, and 4).

Statistics tabulated by DeSilva, Frisbee, and Robinson¹³ (Table 5) reveal that a high percentage of motorists have defective vision in one eye or have only one functioning eye. In the general population of the United States it has been estimated that about 425,000 persons are blind in one eye.¹⁴

Factors Affecting Visual Acuity—(1) *Glare and improper illumination*. Visual acuity is adversely affected by inadequate illumination and by glare, which also cause ocular fatigue. With sufficient light a driver can discern objects or movements that under conditions of deficient light would not be perceived. When light flickers, the eye must continually accommodate to the varying illumination. All drivers have

eyes, he will be convinced that binocular vision is invaluable for drivers of automobiles

The importance of judging distance accurately and quickly and making the proper response is possibly brought out in braking tests. Mason²¹ states that in a study of 100 normal drivers, published in a bulletin prepared by a reliable insurance company in 1934, one-fourth of a second reaction time was required before the driver could apply his brakes after seeing a danger signal. This study included the following speed and braking tests

Speed per Hour Miles	Speed per Second, Feet	Distance Traveled in 1/4 Second Re- action Time, Feet	Distance Traveled After Brakes Were Applied on Dry Pave- ment, Feet	Total Distance Traveled Feet
25	87	9	31	40
35	61	13	61	74
45	66	17	101	118
60	73	19	126	144

Obviously, these figures are higher when the pavement is wet and slippery or on gravel roads

Bahn¹ has stated that about three-quarters of a second is the normal time for a person with reasonably good coordination to make a motion, such as applying brakes after subconsciously perceiving an object, provided the driver is alert. The reaction time is markedly increased if the driver is half asleep or if he is ill, fatigued, inattentive, or intoxicated

According to Bahn,¹ even three-quarters of a second in a vehicle going 40 to 60 miles per hour represents from 45 to 60 feet of distance traveled before the driver can begin to apply the brakes and twice this number of feet traveled before the car can be stopped

The recommended standards for judgment of distance are tabulated in Tables 3 and 4.

Judgment of Distance by One-Eyed Drivers—One-eyed persons are especially inaccurate in their judgment of distance and depth. According to Carr,²² their judgments are nearly always underestimations. Deyo²³ found that the average error in the depth perception of one-eyed individuals is six to ten times greater than the error in individuals with binocular judgment. Our findings have been similar to Deyo's. It was found that of 30 cases using the Howard test the average error in depth perception with the right eye alone was 83.1 mm, with the left eye alone, 81 mm, and with both eyes, 27.09 mm (Table 6). In these tests it is exceedingly important that the head be held absolutely steady so as to obviate obtaining parallax by head movements

It has been shown by Tumarkina and Ostrov-

TABLE 5—DRIVERS WITH DEFICIENT VISUAL ACUITY IN ONE EYE*

Condition of Eyes	Percentage of Drivers
One-eyed	1-2
Deficient eye	20-40
20/30 or less in one or the other eye	30-40
20/40 to 20/100 in either or both eyes	20

* DeSilva, H. R., Frisbee, W. H., Jr., and Robinson, P. *Sight-Saving Rev* 8:174 (1938)

skaja²⁴ that it takes at least six months for a person who has lost one eye to recover some of his ability to judge distance. Persons who lose one eye should re-educate themselves before driving a car. As a rule, the one-eyed person can learn to compensate for his deficiency by using the movements of the head to produce parallax, naturally he obtains parallax from the parts of the automobile against surrounding objects.

Factors That May Cause Deficiencies in Depth Perception—(1) *Visual acuity* Reduced visual acuity in either eye or in both eyes usually makes judgment of distance less accurate.

(2) *Sulfanilamide* It has been found that sulfanilamide may cause a deficiency in judgment of distance. An individual may become mentally confused and retrobulbar neuritis may develop following the ingestion of as little as 40 grams. While undergoing sulfanilamide treatment, a physician of my acquaintance had an automobile accident because he could not judge the distance between his car and one on his right. Persons while taking sulfanilamide, sedatives, and other drugs that may cause mental confusion should not drive automobiles

(3) *Tobacco and alcohol* Experiments concerning the effects of alcohol upon the human body have shown that from the point of view of efficiency there are no so-called beneficial effects. Judgment of distance is affected, reaction time is retarded, and accurate coordination of movement is restricted. However, from the study of the effect of tobacco and alcohol upon aviators in France, we²⁵ found that smoking one cigar or inhaling two cigarettes was more disturbing to certain ocular functions than drinking five ounces of cognac brandy. Abuse of alcohol and in some cases excessive use of tobacco may cause difficulty in judging distance, especially in persons who have certain types of heterophoria, particularly divergence excess, divergence insufficiency, and hyperphoria

(4) *Fatigue* Fatigue, especially that produced by loss of sleep, is an important factor in lessening speed and accuracy in judging distance. Fatigued drivers are less efficient and are a real hazard on the road.

(5) *Lack of oxygen* Lowered oxygen tension

TABLE 4.—PROPOSED OCULAR STANDARDS FOR LIMITED LICENSES

Visual Acuity	Visual Fields	Judgment of Distance	Color Vision	Light Sense	Binocular Vision	Motor Anomalies
<i>One-eyed persons and persons who habitually suppress one eye or have constant or periodic heterotropia should have visual acuity of 20/30 with or without correction. Light sense and visual fields should be normal. Speed should be limited to 40 miles an hour during the day and 30 miles an hour at night, provided light sense and visual fields are normal. Persons with 20/70 vision in one eye with ordinary correcting lenses who have a normal peripheral visual field for motion may be permitted to drive in the daytime but not over 30 miles an hour, and, if light sense is normal and field of vision normal, they may drive at night—but not over 20 miles an hour.</i>	Require 40 degrees temporally in each eye from the point of fixation. Speed limited to 40 miles an hour by day and 30 miles an hour at night. <i>For one-eyed drivers</i> , either because of no vision in one eye or because of suppression of one eye, 80 degrees temporally and 40 degrees nasally. Speed should be limited to 40 miles an hour during the day and 30 miles an hour at night, provided corrected visual acuity is 20/30 or better and light sense is normal. If the applicant has only one eye and visual field is limited minimum requirements are 50 degrees temporally and 30 degrees nasally with a speed limit of 25 miles an hour during the day and 20 miles an hour at night.	If applicant cannot pass the proposed test for stereopsis speed should be limited to 30 miles an hour at night and 40 miles an hour during the day.	Color blind drivers should wear Chapman spectacles or Payne's modification constantly, and with these spectacles they should be able to differentiate red, green, and yellow lights. Persons with congenital or acquired total color blindness should be limited to a speed limit of 40 miles an hour during the day and should not be permitted to drive at night unless they can differentiate red and green signal lights by brightness.	Those whose adaptation is considerably subnormal according to the proposed test should be limited to a speed of 80 miles an hour when driving after sundown.	If tests for binocular vision can not be performed accurately either because of binocular instability or the fact that one eye is totally or partially blind speed should be limited to 40 miles an hour during the day and 30 miles an hour at night. Constant diplopia at 6 M should be disqualifying.	If because of motor anomalies the applicant has depth perception over 50 mm. with a 6-M stereoscope or cannot pass the proposed modified Perla test, speed should be limited to 30 miles an hour at night and 40 miles an hour during the day.

truck. Because his eyes were open, I did not warn him until he barely had time to turn our car into a ditch, which prevented the killing of five people in the smaller car.

Methods of Examining Visual Acuity—In order to obtain accurate records of visual acuity the ordinary test charts should not be used. If they are used, only a few letters should be shown at a time. It would be better to employ a standardized test, e.g., the Ives Test, which could be used for illiterates, but the expense might be prohibitive and the time factor would make the test impractical. Visual acuity tests should not necessarily require knowledge of figures or letters, for literacy tests for drivers' licenses are not required in all states. However, the applicant should be able to indicate the direction of an opening or of an arm of a letter. A practical illuminated eye chart* and fixation lamp unit have been devised.

Some form of projection apparatus (projectoscope or Clason visual acuity projector) is feasible, especially if this apparatus is also used to project the proposed color-vision test. In testing groups of applicants, it would be well if the

test figures could be projected so that a number of individuals could be tested simultaneously. The candidates could be seated in a semicircle at equal distance from the machine designed to show one or two letters at a time. The method described by Morrissey¹⁹ for testing school children is applicable to motorists. He suggests placing children at different distances from the chart and using special blanks that indicate whether the subject is at 10, 15, or 20 feet.

A test¹⁹ that is applicable for the examination of large groups of subjects consists of E's, ranging from the 500-foot letter down to the 10-foot E, which are pasted on disks and rotated by hand or by a small motor. The applicants could sit in a semicircle or in groups as proposed by Morrissey. The chart could be turned between tests while excluding the chart from the view of the applicants, and vision could be recorded in the right, left, and both eyes.

2 Depth Perception

Maxwell Halsey²⁰ has stated that a large percentage of our accidents occur at intersections and involve cross movements. In many of these accidents inaccurate timing and inability to estimate distance and speed are probable factors. If a driver will only attempt to drive with one eye closed, provided he habitually uses both

* Prepared by advisory committee of ophthalmologists to the Eye Health Committee of the American Student Health Association in cooperation with the National Society for the Prevention of Blindness.

who always had headaches when driving because of a hyperexophoria was completely relieved by orthoptic training administered by Miss Mayou in London.¹¹

Inertia of Adjustment (Near to Far and Far to Near)—Inertia of adjustment of the eyes exists when a person changes from one accommodative state to another with difficulty or slowly. This may interfere with vision and judgment of distance as the motorist looks from his instrument board to a distant object. In presbyopic drivers there is an increase in the required time for adjusting from near to far when the instrument dials on the dash are too small or poorly illuminated. In a study of inertia of adjustment of the eyes for different distances, Ferree and Rand¹² found that 18 normal observers required between 0.50 and 1.16 seconds to pass from near to far, from far to near, between 0.39 and 0.82 seconds, and from near to far and back to near, between 0.96 and 1.76 seconds. According to these authors, fast adjustment ranges between 0.96 and 1.25 seconds, medium, between 1.25 and 1.55 seconds, and slow, between 1.55 and 1.85 seconds. A test for this motor anomaly should be used especially for motorists who have accidents and is best performed with the Ferree-Rand tachistoscope.¹³

An investigation of the speed of focusing back and forth on a far and then on a near object by Van Tuyl¹⁴ apparently shows the efficiency of two eyes over one eye.

Fatigue—Ocular fatigue has been generally ascribed to the accommodative muscular system since Donder's work in 1864. It seems evident from our researches,^{15,16,17} that fatigue of accommodation is an important factor in causing fatigue during or after close work. However, the stress of driving is a common cause of ocular fatigue, and we believe that anomalies of convergence¹⁸ and divergence and anomalies of associated lateral movements are more important for the motorist than anomalies of accommodation. Fatigue of convergence and divergence at 6 M may be tested with a modification of the Howe¹⁹ prism ergograph²⁰ and near convergence with a near point ergograph.^{21,22} Persons who have repeated accidents should be tested for fatigue of divergence, convergence, and accommodation. If rapid fatigue is found, appropriate treatment should be instituted.

Suppression of One Eye—When an individual suppresses the vision of one eye, his efficiency in judging distance is decreased. If suppression is sufficiently complete, it may even interfere with the driver's field of vision. Individuals who actually squint (heterotropia) or who have a tendency to squint are more likely to suppress

the vision in one eye, which may be more apparent and more dangerous when the driver is fatigued.

The standards recommended for motor anomalies are tabulated in Tables 3 and 4.

Examination of the Ocular Muscles—The study of prism convergence and divergence at 6 M and 25 cm. is certainly of value, for a weakness of these functions may interfere with the driver's ability to react satisfactorily in an emergency. However, tests of prism divergence and convergence are impractical for routine examinations, and the screen test at 6 M. and 25 cm., which detects gross muscular anomalies should be used. If there is marked movement of the eyes as a narrow screen is passed slowly from eye to eye while the applicant observes a small test object at 6 M., he should be referred to an ophthalmologist for further examination. If the near point of convergence as tested with a 3-mm. white-headed pin or a 3-mm. black dot on a white card is beyond 4 inches, the applicant should also be examined by an eye physician.

4. Defective Light Sense and Hypersensitiveness to Glare

Changing light conditions on the road require unusual retinal adaptation. Brilliant sunlight, as well as glaring headlights, handicaps the driver with slow adaptation to light and to dark. A driver who cannot adapt his eyes rapidly when confronted by brilliant headlights should quickly look away from the glare to the right side of the road. Even after the approaching car has passed the driver may experience seconds or even a minute of partial blindness. In 1936 the National Safety Council reported that two-thirds (67.2 per cent) of the motor accidents occur between 6:00 P.M. and 6:00 A.M. Persons who have eye diseases complicated by night blindness or by their inability to adapt normally to changes in illumination should not be granted unlimited licenses to drive automobiles at night.

Glaring headlights are disturbing even to healthy eyes. Headlights that meet the legal requirements, i.e., throw their light 200 feet ahead, usually blind the driver. A preventive measure is to turn off the headlights and employ city lights, which focus their beams downward at a distance of less than 75 feet. Polarized light and special windshields would prevent unnecessary glare. Special glasses and colored celluloid to be attached to the windshield also are useful.

The recommended standards for light sense are included in Tables 3 and 4.

Light Sense in a One-Eyed Driver—A one-eyed person requires a longer period to recover from glare and to see the road clearly again.²³ Cook²⁴

TABLE 6—STEREOPSIS WITH THE HOWARD TEST IN 30 CASES

Initials	Right Eye, Mm.	Left Eye, Mm.	Both Eyes, Mm.	With or Without Correction
1 Mrs. W. T.	No judgment	172	79	cc
2 Mr. J. C. B.	111	35	40	sc*
3 Miss K. P.	34	50	42	sc*
4 Mr. W. R.	82	110	33	cc
5 Mr. P. S.	103	112	11	cc
6 Mr. R. V.	19	25	11	cc
7 Miss N. S.	95	105	25	cc
8 Miss J. S.	71	124	64	cc
9 Miss M. M.	91	83	26	cc
10 Miss A. D.	52	23	23	cc*
11 Mr. W. P. C.	20	92	47	sc*
12 Miss A. A.	112	78	48	cc
13 Dr. C. B.	46	32	5	cc
14 Miss D. K.	33	78	10	sc
15 Miss V. B.	150	129	21	sc
16 Mrs. M. K.	128	80	48	sc
17 Mrs. R. M.	59	33	18	sc
18 Miss L. G.	176	152	16	cc
19 Mr. J. R.	96	68	10	sc
20 Miss R. H.	80	69	18	sc
21 Miss E. H.	129	54	14	sc
22 Miss P. A.	79	57	8	sc
23 Miss J. D.	108	98	8	sc
24 Mrs. A. H.	120	93	12	sc
25 Mr. J. T.	69	51	18	sc
26 Mr. E.	138	152	12	sc
27 D. L. S.	104	63	39	sc
28 Miss C. W.	141	109	18	sc
29 Mrs. E. N.	41	38	8	sc
30 Mrs. J. R.	37	67	47	cc
Average	83 1	81	27 1	

* Monocular stereopsis better than or equal to binocular stereopsis. Normal stereopsis (Department of Commerce), 30 mm. or less without correction. Normal stereopsis (International Standard) 50 mm. or less

has been shown to affect stereopsis.²⁵ Many headache remedies reduce the amount of oxygen delivered to the cells. This may be a factor in certain accidents.

(6) *Inequality of images of the eyes (aniseikonia)* Aniseikonia is that condition of the eyes in which there is a difference in the size or shape of ocular images (retinal images as interpreted by their corresponding brain centers).²⁶ Ames and his associates at Dartmouth²⁷ have shown that when the images of the eyes are unequal it may be difficult not only to use the eyes together but also the image of one eye may be suppressed. Therefore, the judgment of distance and orientation may be affected. In some subjects even a 3 per cent difference in the size of the images of the two eyes produces a marked apparent tilting of the terrain. Although this condition may be more important for the aviator in attempting to land than for the motorist, under certain conditions of fatigue it might interfere with speed of adjustment to certain situations requiring rapid reactions. Persons who habitually have had difficulty in judging distance or who have repeatedly had accidents might possibly be examined for aniseikonia.

Among other factors that should be considered are carbon monoxide poisoning from

motors or heaters using exhaust air, oxygen depletion from poor ventilation of closed cars, faulty, dirty, or misty windshields, and faulty or inadequate illumination.

Methods of Examination for Judgment of Distance—One difficulty in testing the judgment of distance of automobile drivers is that most tests are technical procedures requiring expensive apparatus and are time consuming. The accepted tests for stereopsis for aviators are modifications of the Brooksbank-James method.^{15,16,17}

Since these tests are expensive and technical, a modification of the Perla test,¹⁸ which is similar to the Davidson test,¹⁹ is proposed for examination at middle distance rather than at the near point. This test is inexpensive, easily applied, and sufficiently accurate for estimating the applicant's depth perception. In this test a 20-mm white ball is placed at the end of a yardstick. The applicant, holding the yardstick over his head, attempts to touch a 20 mm ball attached to another yardstick held by the examiner as he brings the stick down. The applicant should be able to do this accurately in four of five tests without making searching movements to find the ball. If the applicant fails this test, it would serve to focus his attention on his faulty depth perception, and he may seek advice in regard to improving this defect. The question of coordination of the arms may be an important factor in this test, but since it is also a factor in driving it should be considered.

Certain persons who have accidents, especially those who have repeated accidents, should be examined carefully for their ability to judge depth and distance. A 6-M stereoscope, which does not depend too much upon visual acuity, should be used for these tests.

3 Motor Anomalies

An important asset for the driver of an automobile is the ability for his eyes to function normally under the strain of driving. Driving conditions and fatigue may cause latent heterophoria, especially hyperphoria and exophoria, to become manifest and may result in confused vision or diplopia. Unstable binocular vision, uncertainty in judging distance, reduced endurance, as well as tenseness and discomfort of the eyes may be indicative of imbalance of the ocular muscles.

Many persons who suffer from exophoria or hyperphoria, which may interfere with normal binocular vision, are handicapped when driving a car because of the inefficiency of their eyes, they sometimes may be benefited by orthoptic training or operation. One British physician

containing figures or test objects for illiterates, against a confusion color background and have the applicant write down the number of the character he is able to see. Various colored lights, e.g., as projected by the Edridge-Green lantern, also may be used.

The Holmgren yarn test is time consuming, and its routine use in examining large numbers of persons is impractical. The Jennings self-recording wool test is valuable, furnishes a permanent record, but also is too time consuming.

In 1937 the special committee of the American Medical Association to study visual standards for licensure to operate motor vehicles recommended that the examiners who conduct the vision examination be given instructions in using the Ishihara test for detecting color blindness.

6 Deficient Visual Fields

A diminished visual field also plays a part in the safety with which a car is driven. A restricted field, whether because of the loss of one eye or disease, prevents a driver from seeing the entire road. A homonymous hemianoptic field defect would prevent the driver from seeing half of the road. The blind spot in each eye, of which one is usually unaware, is normally counteracted by the other eye.

Defective Visual Field in One-Eyed Drivers—Because the one-eyed person cannot compensate for his blind spot, he is really blind in this area. Therefore, the one-eyed driver may not observe an object obscured by his blind spot until it is too close for him to avoid an accident. The blind area has been considered a factor in some head-on aviation collisions. To supplement head and eye movements to compensate for visual field deficiencies a mirror may be attached to either the left or right fender depending upon which eye is blind. Tinted glass may be used in these mirrors to lessen glare and the annoyance from undesirable reflections.

Standards for Visual Fields—Standards for visual fields are recommended in Tables 3 and 4. If the visual field is limited to 50 degrees temporally and 30 degrees nasally the speed of driving should be limited to 25 miles an hour during the day and 20 miles an hour at night.

Examination of Visual Fields—Although the accurate examination of the visual field is time consuming, the examination should be included as a routine measure in examinations for motor vehicle licenses. To make an inexpensive perimeter, a half circle with a radius of 33 cm., made from a light piece of wood three inches in diameter, should be painted neutral gray. This should be held 33 cm. from the applicant in front of the right and then the left eye, as a 5-mm

white ball test object is carried from the blind to the seeing area along the arc. The arc may be illuminated by a 75-watt daylight bulb in the polar axis, using a shield to prevent the glaring effect of direct rays.

The visual field should be examined with a perimeter if defective vision seems to have been an important factor in causing an accident. For routine testing in some localities the confrontation test would have to suffice. The applicant should be able to note with each eye the movement of the examiner's finger in the four quadrants. The visual field test possibly is a little too complicated for the average examiner who makes the tests. If the suggestions made in 1925⁸ that these tests be performed by physicians could be carried out, it would be possible to make more complete examinations.

7 Visual Reaction Time

The average discrimination reaction time of a normal subject is approximately $\frac{1}{2}$ second and for simple reaction time $\frac{1}{4}$ second. For drivers of motor vehicles discrimination reaction time is important, for it is known that slow reaction time is certainly a factor in many accidents and that visual discrimination reaction time is slowed by advancing years.

Visual Reaction Time of a One-Eyed Person—When an object is exposed for a short period of time, two eyes can perceive it in about half the time that one eye can.⁴⁵ The speed with which objects are perceived by the eyes as they rove up and down the road in driving has been shown to be much slower when visual acuity is subnormal in one eye.

Examination of Visual Reaction Time—The Reeves visual discrimination reaction time test,⁴⁶ with four possible correct reactions and five possible stimuli, is excellent. The subject presses a telegraphic key corresponding to the object observed the moment the stimulus appears upon the ground-glass plate. Certainly all persons who meet with accidents should have studies of their discrimination reaction time. Another method consists of exhibiting a series of traffic lights and of recording with a chronoscope the time taken to put on the brake.

Summary

Because the incidence of motor vehicle accidents is so appallingly high, it is important to attempt to raise the standards of examination of applicants for driver's licenses, as physical fitness undoubtedly is a factor in some accidents.

Visual standards as required by the states are not uniform, and some are be-

apparently has shown that two eyes can see in the dark about twice as well as one. A glaucometer has been described by Albers and Sheard.⁴³ In a group of 144 nonphotophobic individuals tested, the average values of the glare-out illumination were found to be 240 foot-candles for the left eye, 295 foot-candles for the right eye, and 380 foot-candles when both eyes were tested. This study apparently reveals that two eyes can compensate for glare better than one.

Examination of Light Sense—Time required for dark adaptation and response to glare should certainly be studied in all persons who have accidents at night. It would be ideal if all persons could be subjected to the Feldman adaptation test,⁴⁴ but for examining groups this test is too time consuming. Large numbers of applicants could be simultaneously tested if a large screen could be illuminated intensely, after five minutes, all lights could be excluded and the subjects asked to note when they see the prongs of an illiterate *E* (gray on gray with seven perceptible shades of differences between the papers). As soon as the *E* is seen, they should turn their backs to the screen, record the time from a clock at the rear of the hall, and record how the *E* was turned by a drawing. This furnishes a permanent record, and the subject's adaptation time can be compared with normal findings.

5 Color Vision

Many color-blind persons recognize colors easily when they are close to them or when the surface is large but fail to differentiate them at a distance. A color-blind driver may be able to distinguish between "stop" and "go" lights when he is on familiar roads and streets, however, his ability may be impaired in foggy weather or when he is on an unfamiliar road where hue and brightness vary.

The most common type of color blindness is the inability to see red and green. The incorporation of yellow in the red traffic signal and blue in the green signal assists red-green blind people to see traffic signals. The brightness value of a colored light is the predominant characteristic to the color-blind driver. The difference in these lights becomes less as the intensity of both lights becomes weaker. The recommendation made by the traffic engineers that the red light always be kept in the same relative position helps this situation materially and should be made universal.⁴⁵ Another aid would be to have lights of different shape—the red could be a cross (X), the green a round sign (O), and the yellow a plus sign (+).

In a series of 716 cases reported by Selling,⁴⁶ 10 (1.3 per cent) were partially red-green blind.

Thirty-nine (5 per cent) were totally red-green blind, and 1 was totally color blind. All but 3 of the color blind could distinguish a red from a green light with ease. The three subjects who could not distinguish the lights suffered in 2 cases from a severe degree of feeble-mindedness and in the third case from paresis. None of the color blind had unfavorable traffic records. Only 12 had a record of passing a red light, while a much greater number of drivers with normal color sense had been given summonses for this offense.⁴⁷

The ability to differentiate signal lights from surrounding lights under certain conditions is a difficult problem for the normal individual as well as for the color-blind person. This problem is illustrated by driving down a busy city avenue, the sides of which are lined with lighted store windows and lighted advertising signs, and looking ahead three or four blocks to a traffic light surrounded by neon signs. Under these conditions a driver's reaction time is decreased. Forbes⁴⁸ has stated that laboratory tests have shown that reaction time is much slower to a visual signal when this signal must be discriminated from similar objects.

Only one state refuses to grant licenses to drive motor vehicles because of color blindness. Although color blindness is a dangerous defect in only a small percentage of drivers, the requirement of normal color vision would eliminate approximately 3 or 4 per cent of all men applying for license. However, the applicant at least should know that he is red-green blind, because there are devices⁴⁹ that may be used by these persons to permit them to recognize red and green lights with certainty and their use should be required by law (Tables 3 and 4).

Examination for Color Vision—In the first national study⁵⁰ of standards for motor vehicle licenses, no standards were set for color vision, in spite of considerable discussion and the opinion of some members of the committee that normal color vision for the perception of red and green should be required. However, more recently, it seems that certain observers⁵¹ believe that the ability to distinguish red, green, and yellow is important for the driver of motor vehicles. One reason for excluding a test for color vision in the original standards was the impracticability because of the time factor of examining large numbers of applicants with the tests at our disposal. However, we have recently proposed a method of examination for defective color vision which could be adapted for the testing of large groups of applicants.⁵² The method is to project Kodachrome lantern slides of the Ishihara, Stilling, or other pseudo-isochromatic plates,

Eye examinations should be simplified so that nonmedical examiners could perform the tests and thus detect gross defects in judgment of distance, muscle balance, light sense, color vision, and visual reaction time. Preferably all examinations should be made by physicians.

New methods for simultaneously testing groups of applicants for defective visual acuity, color vision, and light sense are suggested, as well as a modified Davidson-Perlia test for quickly detecting gross anomalies in the judgment of distance and a simple method of testing the peripheral visual field for motion.

A special examining center under medical supervision should be available in all large cities for the study of certain applicants with borderline or serious defects and of all persons who have accidents.

Reduced visual acuity in either or both eyes handicaps a driver in all his visual tasks. His depth perception becomes inaccurate, and he is not as capable of judging distances quickly and accurately. Normal visual acuity is an important asset in preventing accidents.

Normal balance and action of the ocular muscles are important in preventing accidents. Defective and slow adjustment of the eyes for different distances incapacitates a driver when he must quickly look from the instrument board to the road. Visual fatigue in its broadest sense is also an important factor, for it may cause the driver's attention to lag. If an individual suppresses the vision in one eye, his eyes should be thoroughly examined in order to ascertain whether orthoptic training or an operation might overcome this defect.

Rapid dark adaptation is of utmost importance when a driver must drive at night and thereby withstand the glare of headlights, for, if he is unable to adapt his eyes under changing conditions of illumination, he is likely to have an accident.

Abnormal color vision is a handicap, for the driver cannot accurately distinguish between red, green, and yellow traffic lights and thereby may cause an avoidable accident. The relative position of traffic lights and their shape should be standardized.

Reduced visual fields prevent the driver

from seeing the entire road, therefore, he may not see a car approaching from a side road or street.

Visual discrimination reaction time may be slow and may interfere with the driver's speed of reaction in an emergency.

Because the one-eyed driver is greatly handicapped, especially in regard to glare, field of vision, and judgment of distance as shown by the data presented here, it is recommended that only a limited license be issued to these drivers. Tests have shown that two eyes are more efficient than one in adapting to darkness after exposure to glare, one-eyed drivers have particular difficulty in judging distance. It has also been shown that two eyes can see an object that is exposed for a short period of time in about half the time that one eye can. Moreover, the one-eyed person's visual field is restricted, and he is unable to compensate for his blind spot as well as the person who has binocular vision. It is important that a driver who becomes blind in one eye should learn to adapt himself to his changed visual reactions before being granted even a limited license to drive an automobile.

Conclusion

It is evident that ocular standards for applicants for license to drive motor vehicles are so inadequate in many respects as possibly to lead to injuries and deaths which could be prevented. One of the greatest difficulties in attempting to raise ocular standards is the time involved in making adequate tests and the need of using trained examiners if more complex methods are to be employed. Tests have been suggested which are so simplified that they could be rapidly performed by nonmedical examiners after a little training. New ocular standards have also been proposed which, although somewhat ideal, would be practical in the larger cities if the proposed methods for examination were adopted. The eyes and the reacting mechanism they control are probably the most important physical factors that cause much preventable slaughter. Therefore, it is hoped that this paper may at least stimulate interest in raising ocular standards and in developing adequately equipped examining centers for drivers of motor vehicles.

low those recommended by the National Safety Council and those recommended by the Special Committees of the American Medical Association in 1925 and 1937

The following minimum ocular standards for unlimited licenses are proposed

(a) *Visual Acuity*—20/40 vision in one eye with or without correcting lenses, provided there is no active eye disease 20/20 or better in the other eye

(b) *Visual Fields*—Field of motion to 70 degrees temporally in each eye as tested with a 5-mm test object and 7 foot-candles of illumination

(c) *Judgment of Distance*—Sufficiently accurate judgment of distance. All drivers should be able to touch a 20-mm white ball with another 20-mm white ball brought from above downward at a distance of 3 feet in four of five attempts

(d) *Color Vision*—Normal perception of red, green, and yellow for all drivers until the shape of traffic lights is changed and the position of the lights standardized

(e) *Light Sense*—Drivers should have rapid adaptation to darkness after adaptation to light. The threshold for light difference should be normal

(f) *Binocular Vision*—Normal binocular vision at 6 M. with the Worth test or one of its modifications⁸ or diplopia spectacles⁹

(g) *Motor Anomalies*—Practically no observable movement with the screen test at 6 M., if much movement is noted, the applicant should be examined with a 6-M stereoscope, preferably a recording model, which includes the reaction time factor, or he should be examined by the modified Perha test¹²

The proposed ocular standards for limited licenses are

(a) *Visual Acuity*—Persons with 20/70 vision in one eye with ordinary correcting lenses and who have a normal peripheral visual field for motion may be permitted to drive in the daytime. However, speed should be limited to 30 miles an hour, and, if light sense is normal and field of vision normal, they may drive at night—but not over 20 miles an hour. One-eyed persons and persons who habitually suppress one eye or have constant or periodic heterotropia should have visual acuity of 20/30 with or without correction. Speed should be limited to 40 miles an hour during the day and 30 miles an

hour at night, provided light sense and visual fields are normal

(b) *Visual Fields*—Require 40 degrees temporally in each eye from the point of fixation, speed limited to 40 miles an hour by day and 30 miles an hour at night. For one-eyed drivers, either because of no vision in one eye or because of suppression in one eye, 80 degrees temporally and 40 degrees nasally, speed should be limited to 40 miles an hour during the day and 30 miles an hour at night, provided corrected visual acuity is 20/30 or better and light sense is normal. If the applicant has only one eye and the visual field is limited, minimum requirement should be 50 degrees temporally and 30 degrees nasally, with a speed limit of 25 miles an hour during the day and 20 miles an hour at night

(c) *Judgment of Distance*—If applicant cannot pass the proposed test for stereopsis, speed should be limited to 30 miles an hour at night and 40 miles an hour during the day

(d) *Color Vision*—Color-blind drivers should wear Chapman spectacles or Payne's modification constantly, and with these spectacles they should be able to differentiate red, green, and yellow lights. Persons with congenital or acquired total color blindness should be limited to a speed of 40 miles an hour during the day and should not be permitted to drive at night unless they can differentiate red and green lights

(e) *Light Sense*—Those whose dark adaptation is subnormal according to the proposed test or any other accepted method should be limited to a speed of 30 miles an hour when driving after sundown

(f) *Binocular Vision*—If tests for binocular vision cannot be performed accurately either because of binocular instability or the fact that one eye is totally or partially blind, the speed should be limited to 40 miles an hour during the day and 30 miles an hour at night. Constant diplopia should be disqualifying

(g) *Motor Anomalies*—If, because of motor anomalies, the applicant has depth perception over 50 mm with a 6-M stereoscope or cannot pass the proposed modified Davidson-Perha test, speed should be limited to 30 miles an hour at night and 40 miles an hour during the day

THE ELMIRA TUMOR CLINIC

A Survey of the Work After Six Years of Its Existence

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BEFORE delving into the particulars of this report, I wish to convey a few general observations on the subject of cancer. Needless to say, its specter confronts all physicians—in general or specialized practice—and is confronting us more and more as the years go by. The magnitude of its frequency can be outlined in a few terse figures. While cancer stood at eighth place in the list of causes of death in New York State in 1900 with a rate of 66.9 per 100,000 population, it had climbed to second place with a rate of 149 in the year 1938. In 1938 the number of deaths from malignant tumors for the whole nation was recorded as over 148,000, for New York State this figure amounted to 20,307 cases, and the share of the upstate area was 9,147 cases. The trend of mortality for the various types showed an increase, except for cancers of the stomach, liver, and buccal cavity which have retained the same rate for fifteen years. Skin cancer has remained unchanged in its trend for the past thirty years. Cancer was the leading cause of death for women between the ages of 35 and 55. In 1938 the death rate per 100,000 population for the whole state was 150, for Chemung County as a whole, 176.6, for the county (without cities, etc., over 10,000) it was 122.5 (state, 154.7), and for the city of Elmira it was 211.7 (state, 149). There were in this city in 1938 a total of 92 deaths from cancer and in 1939 a total of 73 deaths. Of these cases, 35 were due to lesions of the gastrointestinal tract, 12, the female genital organs, and 7, the breast. This rate for our city is appallingly high, inasmuch as only six cities in the state have a higher rate. The explanation for this may be one of many: on the one hand it has been found that upstate communities have a larger percentage of middle-aged and older

persons in which the frequency of cancer and, therefore, the death rate is known to be higher. Another point may be the fact that the two local hospitals are centers of attraction for diagnosis, treatment, and ultimately, in some cases, death of cancer cases. However, this whole question is left open for discussion.

In 1933 a group of doctors in Elmira working at St. Joseph's Hospital had the idea that a local tumor clinic would fill a need: first, to reduce the burden on the always overcrowded facilities of the Cancer Institute of Buffalo and keep local patients at home as much as possible, and, second, to offer to doctors a means of improving their own knowledge and experience of clinical and pathologic cancer.

The Elmira Tumor Clinic opened on November 8, 1933, and from the first patient seen it has been kept on the basis of no pay for physicians' services. Private patients have been seen for diagnosis and referred back for treatment to the physician sending them, to the x-ray department of the hospital, or to the Buffalo Institute. It has been a strict rule of the clinic to see only such patients as have been referred by an outside physician, recommending that the physician come to the clinic with his or her patient and share in the examination. Patients referred by free clinics and hospital authorities have been treated as an extension of free city or hospital care.

The staff of the Tumor Clinic consists entirely of doctors interested enough to attend with more or less regularity, without regard to hospital affiliation. The active staff of the Tumor Clinic at present consists of the following internists—Drs. F. S. Hassett and R. Powell, with Drs. M. F. Butler, J. Mark, and D. Kaplan as assistants, surgeons—Drs. J. S. Lewis and J. F. Lynch, gynecolo-

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PSYCHIATRISTS ORGANIZE FOR PUBLIC EDUCATION WORK

Organization of twelve regional districts, each headed by a nationally known psychiatrist to cooperate with the press and otherwise to foster the dissemination of sound psychiatric information to the public, was announced November 7 by Dr C. Charles Burlingame, chairman of the Committee on Public Education of the American Psychiatric Association. Dr Burlingame stated "The Association has long felt it desirable to have decentralized public education work along psychiatric lines. Physicians who are more closely in touch with local conditions and local needs are in a much better position to interpret the policies and aims of the Association, and with better results because they are thinking in terms of the realities of local conditions."

It is hoped that this new setup will be useful to the press of each community by giving them an authoritative source of information on psychiatric matters. Another important phase of the work will be to make known the Association's policy with regard to mental hospital standards as the occasion requires. "There are few mental hospitals in the country which even now attain the minimum standards of care as outlined by the Association," Dr Burlingame said, "and from time to time there is danger of still further lowering of standards by reason of political manipulation, or through a lack of un-

derstanding that mental patients need and deserve to have the same high standard of medical care as obtains in the general hospital. One of the principal aims of this organization will be to acquaint the public with the fact that a well staffed, well-equipped hospital for the care of the mentally ill is not a luxury, but a basic necessity in any civilized community."

The two chairmen in New York State are Dr Karl M. Bowman, of New York City, and Dr Richard H. Hutchings, of Utica. Dr Bowman is the director of the Psychiatric Division of Bellevue Hospital and is professor of Clinical Psychiatry at New York University Medical College. He is a fellow of the A.M.A., member of the State Society, New York County Medical Society, American Psychiatric Association, and a member of the Executive Committee of the National Committee for Mental Hygiene.

Dr Richard Hutchings is a past-president of the American Psychiatric Association. He has been in the New York State hospital service almost continuously since 1891 and is professor of Clinical Psychiatry (emeritus) at Syracuse University. He has been president of the Central School of Nursing, the Associated Charities of Utica. He is a member of the A.M.A., the Oneida County Medical Society, and the American Psychiatric Association.

60 and 80 There was 1 directly attributable death two years after resection of the lower lip

The *oral cavity* provided us with 7 cases, 3 of the tongue, 2 of the palate, and 2 of the tonsil, 5 were men and 2 were women The death rate was high, only 1 case of involvement of the tongue and 1 of the palate surviving One case of cancer of the larynx in a 44-year-old man died of a postoperative hemorrhage after gastrotomy for a tracheo-esophageal fistula

The *digestive system* provided us with the poorest record, 10 cases in all (esophagus 2, stomach 1, cecum 1, rectum 6) of which 9 are dead. The only living case is the patient with cancer of the cecum which was resected After a short period the patient developed extensive metastases of the mediastinum Massive doses of x-ray brought about their disappearance, and to this day the patient is alive and working—four years after the operation. The cases were all treated with radium and x-ray, but some came under our observation in a too far advanced condition One *hypernephroma* patient died two years after the first visit, and 1 patient with *embryonal carcinoma* of the *testicle* died after a short observation

The next category comprises the *female genital system*, one of our most important groups There were 22 cases of *epidermoid carcinoma* of the *cervix*. They ranged in age between 30 and 80, with the preponderance in the 40's and 50's, the average duration of symptoms, before the first visit, was less than one year Today 12 patients are alive, including three five-year cures, 9 are dead, and 1 case could not be followed up Cures are ranging from two to twelve years The treatment was by radium and x-ray combined, 12 cases, radium alone, 8 cases, and x-ray alone, 2 cases It is interesting to note that 2 cases were found in the cervical stump after supravaginal hysterectomy One was found nineteen years postoperatively, and died three and one-half years after the discovery of the cervical lesion, whereas the other one

appeared eighteen years after the original operation and is well two years after the first clinic visit. One far advanced patient with *cancer* of the *vulva* died nine months after the first visit.

The next group comprises the cases of *adenocarcinoma* of the *uterus* Here we saw 9 patients, with ages ranging from 44 to 70 The average duration before the first visit was two and one-half to one year after having first been seen The treatment consisted in radical operation in 5 instances, x-ray in 4, and x-ray and radium combined in 1 Three operative cases are alive, also the case with the combined treatment. One *ovarian malignancy* was operated upon, and is alive and well after one year

The largest group includes the *breast* cases, 26 in all, with 1 male patient among them The average duration of symptoms before the first visit was about one year, the ages ranged from 30 to 80, with 8 cases in the fifth, 5 in the sixth, and 7 in the seventh decade All had operations, a few with pre- or postoperative radiation Fifteen patients are alive and well after observation ranging from seven years down to two months, including two five-year cures, 10 are dead, and of these 7 died directly of metastases, one could not be followed up The time of death after operation ranged from one to four years There was 1 recurrence in a scar, five years after the first operation.

The *hemic* and *lymphatic* cases numbered 7—namely, 2 cases of *Hodgkin's disease*, 1 of which is alive after seventeen years' duration and treatment, 1 patient with *lymphosarcoma* of eight years' duration who died three years after the beginning of treatment, and 4 patients with *cancer* of the *parotid*, *salivary*, and *submaxillary* glands, 1 of whom died at the age of 78

Finally, there were 10 miscellaneous cases, such as *sarcoma* of *bone*, *connective tissue*, or *secondary spread* to the *integuments*, 5 of these patients are alive and well after five years or less The double cases, 4 in all, represented the following combinations. *uterus* and *breast*, died

gists—Drs M Dreyfuss, Scott Howland, and Hood, Corning, N Y, dermatologists—Drs H Hunt and H Walker, urologists—Drs E Bush and F Creighton, otolaryngologists—Drs W Boland and W Decker, radiologist—Dr H A Burch, pathologist—Dr L Bleyer, director—Dr J S Lewis, sister-nurse—Sr Mary Rose, assistant nurse, and Miss McKaig, and stenographer—Sr Regina Consultants are available from staffs of both hospitals. Only two members of the hospital staff attend ex officio, as it were the pathologist and the radiologist. Their services are regularly in demand and without them the clinic would lose its chief staff. In short, anyone may be referred to the clinic outright for diagnosis and treatment or merely for an opinion or consultation. It is probable that in time the clinic will become loosely connected with the Buffalo Clinic as a branch center, even with a paid full-time director. However, with state finances in their present shape, the clinic remains an entirely voluntary activity.

Having worked for several years with the Elmira Tumor Clinic, I have been interested, and by other members encouraged, to gather some figures on which to report what we have been able to accomplish.

The cures noted have been the results of treatments at the clinic, at both hospitals, and at the Buffalo Center. The results have been arrived at by follow-up wherever possible. From November 1, 1933, to November 1, 1939, a total of 537 cases was seen, comprising almost every ailment that could have a faint resemblance to a tumor or a malignant condition. This even included a "living tumor," a full-term pregnancy which came to delivery in the hospital inside of twenty-four hours after the clinic visit. Of these 537 general cases, 134 were malignancies, all of them microscopically proved by competent, recognized pathologists, as only such cases would be of value in a critical survey of our material. This gives a percentage of 25 per cent of all seen cases as being actual cancers.

Before elaborating on these, let us quickly glance at the varieties included in the 403 nonmalignant cases. In 86 cases no definite diagnosis was made, in 33 no pathology was found. There were thirty-one cancers of various organs, including the skin, which, however, were not confirmed by biopsy and, therefore, without value in this survey. Skin lesions, such as keratosis, wart, hemangioma, nevus, papilloma, and others, accounted for the relatively large number of 92 cases. Only 4 cases of cutaneous syphilitic affections were noticed. The breast cases, such as chronic cystic mastitis, benign tumors, etc., amounted to 25 cases. Cervicitis, cervical polyp, and similar conditions were rather frequent—18 cases in all. The rest of the 403 cases were scattered among a multitude of benign conditions. And now to return to the most important work of the survey—namely, the cases of malignancy.

The 134 cases occurred in 130 patients, inasmuch as we had 4 patients with double lesions. The distribution was over the following main areas. *Skin*—27 cases, of these, 22 were of the basal cell type, 14 in men and 8 in women. The age varied from 18 to 90, with the majority of cases between the ages of 50 to 90. Most frequent locations were nose (6) and cheek (7). The duration before the first visit was generally several years, and the treatment consisted of x-ray or fulguration. One five-year cure was in this group, but there were also 3 deaths due directly to the existing lesion. One patient with a *pearl-cell carcinoma* of the anal region had an operation for a rectal polyp nine years before the first clinic visit. When she was seen, the case was hopeless, and death occurred after four months. Of 4 cases of *malignant melanoma*, 1 occurred in a man and 3 in women. The age varied from 40 to 70 years and the locations were nose (hemangiosarcoma), finger, arm, and back. Two cases are alive and 2 died. Terming it a subdivision of the skin, we have to record 11 cases of *lip cancer*, all in men. The age range extended from 50 to 90, with a high frequency between

EMPHYSEMA. THE DOMINANT FINDING IN AN ACUTE RESPIRATORY INFECTION

Preliminary Report of a Possibly New Clinical Picture

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EVERYONE who has seen an appreciable number of patients during the current 1940 wave of respiratory infections has been perplexed, not infrequently, in an endeavor to account for the varied complaints of the patients. The cases in general have suggested the diagnosis of some one or another of the more common diseases but at the same time have presented certain oddities that make their classification uncertain. The original infection has tended to be self-limited, but the aftereffects have often been so discouragingly prolonged that they have outweighed the importance of the acute stage and, hence, constitute the real challenge to diagnosis and, more especially, adequate therapy. In a study of some 200 of these cases as seen in New York City, characteristic findings were noted in each instance which suggest that we have been dealing this year with an essentially different clinical entity. If this should prove to be the case, the problems of diagnosis and treatment can be met only through the concerted efforts of many investigators. This preliminary report is submitted in the hope that other clinicians will review their recent respiratory cases for the characteristic findings, which persist long after the acute stage has passed, to see whether the features noted are as widespread and significant as they have appeared to be in this particular group. The observations here recorded have been made in a pediatric practice, correlated with more extensive studies on the children's ward of a large city hospital. Enough cases have been seen in adults, however, through the courtesy of my confreres, to warrant the statement that age has no effect whatever on the incidence, immunity, symptomatology, or findings as presented during

the current epidemic. I have personally examined patients in all five boroughs of New York City, in Westchester and Dutchess counties of New York, in Connecticut, New Jersey, and Washington, D C. In all these regions the picture has been the same.

Regardless of whether the original respiratory infection was mild or severe, it was frequently followed by an unusually persistent or recurrent anorexia, lassitude, or muscular weakness. Dyspnea on exertion, recurring substernal pains, or feelings of chest "heaviness" were often noted over a period of weeks, not infrequently accompanied by a distressing and unproductive cough. Persistent low-grade temperatures in many cases were not satisfactorily explained on the basis of noted physical observations, x-ray studies of the chest, tuberculin tests, and urinary or blood studies. Relapses were extremely common, often without findings sufficient to account for the degree of disability or temperature then present. A secondary anemia was strikingly rare as a possible cause for the patients' disability, a higher than average hemoglobin percentage being more commonly reported along with an even greater increase in the number of red blood cells. These laboratory findings suggested a compensatory mechanism such as occurs in an anoxic anovemia, and it is felt that this may actually be the cause of many of the diverse and persistent complaints noted—complaints that have often simulated those known to occur in cases of mountain sickness. A persistent emphysema is one of the recognized causes of an anoxic anovemia, and this was found in each of the cases here reported. Previously, emphysema has been an uncommon finding, especially in acute re-

after operation for carcinoma uteri, uterus and nose, died from the uterine lesion, rectum and lip, died from the rectal cancer, cervix and breast, died from the cervical lesion

In summing up, I wish to state that this paper intends to describe the work done during the six years' existence of the Elmira Tumor Clinic. Every case has been checked, and the follow-up has been completed to the end of the sixth year, with a failure of only about 5 per cent. It is my personal opinion that the results

fully justify the existence and continuation of this clinic, that the installation of the deep-therapy x-ray outfit in one of the local hospitals is of inestimable value, and that the next goal should be the allotment of radium through federal or state sources. Of further help will be the cooperation with the recently organized Division of Cancer Control of the State Department of Health, chiefly in the line of consultant service and assistance with local programs of popular education

EPIDEMICS IN WAR TIME

In all wars epidemics have played a predominant, and in most wars the predominant, part in victory. In most campaigns in history, disease has been the winner and not the sword. The Goths and Vandals did not conquer Rome, rather malaria and plague—the black death—did so, according to Dr C J Donelan of the British Ministry of Health, who communicated to the *Lancet* (June 1, 1940) the suggestion that probably bubonic plague was introduced into Europe by the Tartars. Typhus, "the red cloak," appeared in Spain in 1490. The Thirty Years War was the cause of epidemics of several kinds in all parts of Europe, through which some countries lost half or more of their population. The French army under Napoleon was decimated by typhus more than once, to wit, the French army retreating from Moscow. It is stated that the Federal army in the American Civil War lost 186,000 men from disease and less than 100,000 from wounds. Enteric fever was the main cause. Epidemics of smallpox were spread over almost all parts of Europe during the Franco-Prussian War of 1870. The Boer War cost the British Army 11,000 men from disease, mainly from enteric fever, and 6,000

from wounds. In the war of 1914-1918 infectious diseases were held in check, especially enteric fever. Malaria caused the majority of deaths from disease in the British army. The campaign in Macedonia, which was seething with malaria-carrying mosquitoes, accounted for the most cases of disease and invaliding and death. Dysentery occurred.

While greater medical knowledge of how to prevent disease and pestilence in war was evidenced in the 1914-1918 campaigns, the pride that the medical profession rightly showed in this result was soon humbled by the pandemic of influenza which killed in less than a year more people than in four years of destructive warfare. However, some lessons have been learned and precautions against some diseases put into practice effectively. With regard to influenza we must confess our impotence, remarks the *Medical Record*, except that we have learned that war, by overcrowding, often under unhealthy conditions, gives it the opportunity to slaughter on a vast scale, and reveals the truth that nature abused can quickly destroy life on a larger scale than man can by the abuse of his inventive faculties.

TUBERCULOSIS SANATORIUM CONFERENCE OF METROPOLITAN NEW YORK

The Tuberculosis Sanatorium Conference will present a clinical session on chronic pulmonary diseases on Wednesday, December 11, at 8 30 P.M., at Cornell University Medical College Amphitheatre, 1300 York Avenue (at 69th Street), New York City.

The program, arranged and presented by Municipal Sanatorium, Otisville, New York, with Dr Grant Thorburn, chairman, presiding, will be as follows:

(1) "A Plea for the Early Jacobaeus Operation in the Treatment of Incomplete Collapse Therapy," by Dr Samuel A Thompson, director of surgery, and Dr Mortimer Greenberg, resident physician, with discussion by Dr James S Edlin, attending physician.

(2) "Data Concerning Location and Measure-

ments of Pulmonary Cavities and Foreign Bodies," by Dr J Emerson Noll, roentgenologist, with discussion by Dr Henry K. Taylor (by invitation), roentgenologist-in-charge, Welfare Hospital, New York City.

(3) Pulmonary Drainage Its Relation to Collapse Therapy in the Treatment of Tuberculosis," by Dr Milton S Lloyd, attending bronchoscopist, with discussion by Dr Louis H Clerf (by invitation), professor of laryngology and bronchoscopy, Jefferson Medical College, Philadelphia.

(4) General discussion led by Dr J Emerson Noll, roentgenologist, Municipal Sanatorium. Physicians are requested to bring with them any interesting x-ray films for informal presentation, 7 45 to 8 30 P.M.

The doctors in forty-one of Michigan's eighty-three counties are refusing to take the low fees

the state offers for treating indigent patients and are giving their services gratis.

by an afternoon rise of low-grade temperature. Often described as "hacking" or "barking," the cough generally was harassing, persistent, and unproductive. Occasionally it was spasmodic, simulating pertussis without a "whoop." In the cases of longer standing, sudden severe chest pains were common, usually substernal. In 1 child the severity, persistence, and radiation of the pain from the lower right axillary region to the shoulder were such as to suggest a pleuritis. Older children frequently described a feeling of "heaviness" or a "tight band" around the chest. Such discomfort was aggravated by exercise. Dyspnea on exertion, such as stair climbing or running, was common, the child "losing his wind" too easily. Annoying spells of hic-cough were occasionally encountered.

Of late there has been a series of unusual and even bizarre joint complaints. Children were brought in because of a "queer gait" which usually started suddenly following a sharp, severe pain in some joint. One boy, aged 7, cried out because of pain in his hip as he jumped out of bed. He walked with a waddling gait. Another was seen with his foot "locked" in an equinus position. One patient who awakened with a "stiff neck" was seen after three days with his head held to one side and the chin drawn far back toward his shoulder. Not infrequently, there has been a history that a knee "slipped backward," "gave way," or "locked" with such frequency the patient or his parents had learned to correct it with manipulation. In still another group the complaint was not of these sudden joint pains but of recurring "cramps," often of great severity and most commonly occurring at rest or during sleep. Usually the pain was in the knees or along the anterior tibial borders, but it was also located in the ankles, arches, or anterior thighs. Finger pains gave the greatest trouble to 1 young pianist, occurring only when the hands were at rest.

Physical Findings

An enlargement of the papillae of the

tongue, a persistent edema of the uvula, and an emphysema was noted in each of the patients included in this report. All 3 were found in contact cases before clinical symptoms were apparent, and all 3 persisted even for weeks after the acute stage had passed. In no case were the mouth findings present unless there was an emphysema, and in no instance was emphysema found without the changes in the tongue and uvula.

Mouth—The appearance of the tongue varied with different phases of the illness, passing through certain well-defined stages. The earliest change noted was a slight enlargement of the papillae, more prominent along the sides and tip. This was accompanied by a slight veiling over the dorsum of the tongue, especially toward the back, giving it a gray-pink appearance. Later this moist coating became heavier, and the papillae became further enlarged and redder as did the sides of the tongue, until eventually a brilliant "strawberry" appearance was presented during the acute stage or, later, at the time of a relapse. The tongue did not peel within a few days but gradually retrogressed until a gray-pink stage again was reached. The papillae then remained large but were of the same color as the tongue and, hence, were not readily apparent. This "poststrawberry" tongue persisted for weeks. The size of the papillae and the brilliance of the tongue coloring at any given time came to be regarded as reliable guides to the activity of the infection. In some of the longer standing cases the tongue occasionally showed an unusual smoothness and shininess suggestive of a deficiency of the vitamin-B complex such as occurs in posttyphoid patients.¹

Pharynx—The edema of the uvula was of all degrees. In the contact and chronic cases the involvement was often so slight as to show only as a pale, increased translucency readily overlooked, especially in infants or others who kept the uvula retracted for relatively long periods. In the more acute cases it was injected and enlarged, sometimes excessively so. At times the edema extended down over the

spiratory infections, and, therefore, has been given but little consideration in differential diagnosis. Consequently, we have generally overlooked the outstanding feature of the chest examination that would lead to an understanding of the problem the patients presented this year.

After the possibility of an emphysema being present was once forced upon me, it became obvious that its ready detection depended upon the very changes of percussion and auscultation ordinarily considered of no significance. Hyperresonance was readily appreciated only when the ear was kept attuned for this finding as well as for an impaired percussion note. Attention had to be given to the relative intensity of the breath sounds as well as their quality, and to the length of expiration in addition to its pitch. Any increase in the intensity of vocal resonance in a crying infant is instantly noted by an experienced clinician, but even an extensive diminution of the vocal sounds was easily overlooked unless one listened especially for it. Once aware of the need for concentrating on these seemingly minor changes to be noted in the examination, the presence of the emphysema was thereafter readily apparent.

Symptomatology

The onset in the acute cases was variable and not characteristic. Often there was only a sudden elevation of temperature, sometimes with a history that the child had been exceptionally irritable during the preceding twenty-four hours or had been especially inactive. Accompanying the temperature rise there was often an excessive drowsiness, amounting even to a semistupor. Not uncommonly, such a stuporous child without warning might become violently delirious, even difficult to restrain, or a delirium occurring during sleep might be the first indication of the illness. Headaches of great severity occurred early and persisted for twenty-four hours or more. Sensations of "chilliness" were common. During certain periods of the epidemic, laryngitis or "croup" were the first symptoms noted. Less commonly, a "whooping" cough was

mentioned, usually in a child known to be allergic. With these few exceptions, a cough was strikingly uncommon during the early stage. Coryza, too, was remarkably infrequent. A severe earache at times signaled the onset, generally associated with hemorrhagic vesicles on the drum. Vomiting and abdominal pain even before any rise of temperature, not infrequently presented serious problems in the differentiation between an acute appendicitis and a mesenteric adenitis.

The complaint of a "sore throat" of any degree is uncommon in young children and yet was encountered with remarkable frequency during this epidemic, being mentioned by children as young as 3 years of age. The pain often was severe and out of proportion to the noted pharyngeal changes. On the other hand, some children with a follicular tonsillitis and extensive pharyngeal inflammation complained of little local discomfort.

Regardless of the nature or severity of the onset, the patients as a group showed a remarkable apathy even after the temperature had returned to normal. The mothers had no difficulty in keeping these patients in bed. Appetites diminished, often to the vanishing point, milk and fruit juices being especially obnoxious. Among the infants there was a tendency to a recurring diarrhea necessitating the use of banana powder or pectin-agar mixtures over relatively long periods. Mucus was commonly present but never blood or pus. In fact, mucus in the stools of older children and infants was often found during the entire time that expectorant drugs were administered.

Many patients were not seen until ten days to several weeks after the acute illness. (Occasionally there was only the history of a "grippey cold" in some other member of the family.) In this group the complaints were anorexia, loss of weight, excessive fatigue, muscle weakness, lassitude, or a cough. The cough sometimes began suddenly without a temperature rise and was of such violence as to demand immediate attention. More commonly, it was of several weeks' duration, day or night, and was accompanied

by an afternoon rise of low-grade temperature. Often described as "hacking" or "barking," the cough generally was harassing, persistent, and unproductive. Occasionally it was spasmodic, simulating pertussis without a "whoop." In the cases of longer standing, sudden severe chest pains were common, usually sub-sternal. In 1 child the severity, persistence, and radiation of the pain from the lower right axillary region to the shoulder were such as to suggest a pleuritis. Older children frequently described a feeling of "heaviness" or a "tight band" around the chest. Such discomfort was aggravated by exercise. Dyspnea on exertion, such as stair climbing or running, was common, the child "losing his wind" too easily. Annoying spells of hic-cough were occasionally encountered.

Of late there has been a series of unusual and even bizarre joint complaints. Children were brought in because of a "queer gait" which usually started suddenly following a sharp, severe pain in some joint. One boy, aged 7, cried out because of pain in his hip as he jumped out of bed. He walked with a waddling gait. Another was seen with his foot "locked" in an equinus position. One patient who awakened with a "stiff neck" was seen after three days with his head held to one side and the chin drawn far back toward his shoulder. Not infrequently, there has been a history that a knee "slipped backward," "gave way," or "locked" with such frequency the patient or his parents had learned to correct it with manipulation. In still another group the complaint was not of these sudden joint pains but of recurring "cramps," often of great severity and most commonly occurring at rest or during sleep. Usually the pain was in the knees or along the anterior tibial borders, but it was also located in the ankles, arches, or anterior thighs. Finger pains gave the greatest trouble to 1 young pianist, occurring only when the hands were at rest.

Physical Findings

An enlargement of the papillae of the

tongue, a persistent edema of the uvula, and an emphysema was noted in each of the patients included in this report. All 3 were found in contact cases before clinical symptoms were apparent, and all 3 persisted even for weeks after the acute stage had passed. In no case were the mouth findings present unless there was an emphysema, and in no instance was emphysema found without the changes in the tongue and uvula.

Mouth—The appearance of the tongue varied with different phases of the illness, passing through certain well-defined stages. The earliest change noted was a slight enlargement of the papillae, more prominent along the sides and tip. This was accompanied by a slight veiling over the dorsum of the tongue, especially toward the back, giving it a gray-pink appearance. Later this moist coating became heavier, and the papillae became further enlarged and redder as did the sides of the tongue, until eventually a brilliant "strawberry" appearance was presented during the acute stage or, later, at the time of a relapse. The tongue did not peel within a few days but gradually retrogressed until a gray-pink stage again was reached. The papillae then remained large but were of the same color as the tongue and, hence, were not readily apparent. This "poststrawberry" tongue persisted for weeks. The size of the papillae and the brilliance of the tongue coloring at any given time came to be regarded as reliable guides to the activity of the infection. In some of the longer standing cases the tongue occasionally showed an unusual smoothness and shininess suggestive of a deficiency of the vitamin-B complex such as occurs in post-typhoid patients.¹

Pharynx—The edema of the uvula was of all degrees. In the contact and chronic cases the involvement was often so slight as to show only as a pale, increased translucency readily overlooked, especially in infants or others who kept the uvula retracted for relatively long periods. In the more acute cases it was injected and enlarged, sometimes excessively so. At times the edema extended down over the

anterior faucial pillars and involved the entire pharynx when the inflammation was severe. The anterior pillars generally were injected, the color often being bluish red, and extending out over a relatively broad band. This band or encircling faucial ring sometimes persisted for long periods. In children over 5 years of age an extensive follicular tonsillitis was observed.

Cervical Adenitis was never severe and was rare during the first weeks of the epidemic, even in patients with a follicular tonsillitis. Of late, a moderate enlargement of the glands has occasionally been noted.

Lungs—An obstructive emphysema was the outstanding finding in each examination. In the early cases small or large areas were found scattered throughout the chest without selective location. In those of longer duration the emphysema was always bilateral and was generally more extensive, sometimes sufficient to obliterate liver as well as cardiac dullness. In patients under treatment, the last regions to clear were usually located on either side mesial to the scapulae.

Scattered patches of partial atelectasis were generally associated with the emphysema. Almost invariably one such area was found in the right axillary region anterior to the lower half or third of the scapula, sometimes extending below and posterior to the tip. Occasionally there was a similar involvement on the left side. Cases of longer standing usually had somewhat larger areas at the bases. In the child where the severe and prolonged chest pain suggested a pleuritis, the findings were so extensive over the right lower lobe that an admission diagnosis of pleurisy with possible effusion was made. However, the percussion changes and markedly diminished breath sounds of this region disappeared within the first twenty-four hours, being replaced by scattered areas of normal breath sounds, emphysema, and patches of atelectasis. Such a sudden metamorphosis in the character and distribution of the findings was one of the constant features to be noted in this group of cases, the chest pic-

ture often varied in the course of a single examination.

Rales were conspicuously absent. In a few cases sibilant and sonorous sounds both inspiratory and expiratory were heard during the acute stage. Later in the illness, transient coarse rales, which disappeared after a cough, were infrequently noted after the use of stimulating expectorants. Bronchial breathing has not been heard except in the cases where an unmistakable lobar pneumonia was superimposed on the emphysematous chest during a later stage of the illness.

The respiratory rate was characteristically slow even in the acute toxic cases with a high temperature. Dyspnea, cyanosis, or other respiratory embarrassment generally were not encountered. A notable exception occurred, however, when an area of atelectasis occurred at one or both apices. Then the respiratory rate was increased, ranging from 44 to 48 per minute in children of school age to as high as 70 in young infants. Occasionally this rapid rate was accompanied by a slight to moderate dilatation of the nostrils. An expiratory grunt was not heard, nor were cyanosis or dyspnea present even under these conditions. The observation of the greatest importance was a possible interruption of the respiratory rhythm. When a child became sufficiently interested in some outside stimulus, a definite slowing of the rate would occur. The older children could, on command, hold the breath for relatively long periods. In every case the increased respiratory rate dropped to normal as soon as the apical region opened, although the temperature remained elevated.

Heart—A change in the location or character of the maximum cardiac impulse (as distinguished from the true cardiac apex or outer border) was noted at some time in each case. Usually the maximum impulse was found shifted about 2 cm. to the right of the position regarded as normal for the age and in the fourth or fifth interspace. In 1 infant it dropped to the sixth during one twenty-four-hour period when the true

outer border also was located in the sixth interspace. The shift to the right was noted not only in children with normal hearts but in those with a hypertrophy due to chronic valvular disorders or congenital defects. Not infrequently, the entire cardiac impulse became indistinct and difficult to localize because of the overlying expanded lung. The finding of a shifted maximum impulse or an indistinct apical beat should lead one to suspect the presence of an emphysema and should be of special value in the examination of a crying child or 1 otherwise uncooperative so as to make percussion and auscultation unsatisfactory.

A tumultuous character of the heart sounds was noted frequently during the acute stage and occasionally, at later periods, accompanying the sudden change in heart rate which would occur with the closure or opening of lung areas. During such periods of change in pulmonary ventilation, the cheeks were seen to flush suddenly, or a transient change of facial expression would occur. The older patients described "peculiar" chest sensations occurring at such times. A metamorphosing character of the heart sounds and rate would seem to be as significant as the metamorphosing breath sounds. A slow pulse rate following the fall of temperature occasionally occurred during the earlier weeks of the epidemic, dropping to 60 per minute in children of school age and even to 56 in 1 boy 10 years of age.

Laboratory Findings

Blood—The white blood cells ranged from 6,000 to 12,000, more commonly being below 10,000. Regardless of the age of the child, the polymorphonuclear leukocytes averaged 70 per cent, the immature forms being 12 to 15 per cent. Counts up to 18,000 were found in cases with an extensive throat infection. The red blood cells averaged 4 2—5,000,000 and the hemoglobin 80 to 100 per cent. The sedimentation rate was normal whenever determined.

X-Rays—The roentgenologic studies made on these patients showed no characteristic changes in the chest picture.

(The areas of emphysema apparently attenuate the shadows of the patches of partial atelectasis.) A generalized hypervascularization was found in each case, usually with an increased or widened hilar shadow. Occasionally the vascular streakings were somewhat more prominent in the triangular basal regions. When the emphysema was extensive, examinations made in the upright position revealed a moderate increase of pulmonary aeration and a slight lowering of the diaphragm.

Bacteriology—The one organism consistently found in the secretions of these patients was a staphylococcus, either aureus or albus. Not infrequently the organism was one that hemolyzed blood agar plates within twenty to twenty-four hours. Such staphylococci, apparently in pure culture, have repeatedly been reported from the throats of patients with an extensive follicular tonsillitis as well as those with milder throat manifestations. A hemolytic streptococcus was occasionally found in relatively small numbers in the throat cultures in addition to the predominating staphylococcus. A rapidly hemolyzing staphylococcus has repeatedly been the only organism isolated from the tenacious material obtained on laryngeal swabs. It has been present in the discharge from infected nasal sinuses and in cases of otitis media where the aural exudate was serosanguineous in character. In 1 boy with a gangrenous ruptured appendix staphylococci were found in the peritoneal exudate. Within six hours after first noting a small pustular lesion at the base of one nail, a girl, aged 12, showed extensive dorsal swelling and tenderness of the entire hand, a lymphangitis visible to the elbow, and an involvement of the epitrochlear and axillary glands. This was accompanied by an elevation of temperature and general toxicity. The blood culture was reported as "no growth", staphylococci were recovered from the purulent material of the finger. Another child with a rapidly necrosing lesion at the base of a nail always had blood-streaked dressings. Deep-seated hemorrhagic vesicles were

scattered throughout all the adjoining indurated tissues. Again a rapidly hemolyzing staphylococcus was reported in pure culture. One infant, 10 days old, was seen because of styes on one lid and large pustules forming behind one ear. He showed the typical mouth and chest signs, and only a staphylococcus was isolated from the throat culture.

The possible significance of these bacteriologic findings is as yet undetermined.

Complications

Anoxemia—The emphysema in all untreated cases persisted for indefinite periods, tending to become more extensive with the resumption of activities. Dyspnea, the various chest symptoms, and a cough were then the most common complaints and were usually accompanied by an exaggeration of the anorexia, fatigue, and muscular weakness. Typical facies came to be recognized in this group following the development of the anoxic anoxemia. A circumoral grayness was readily apparent, especially in those of lighter complexion, with similar color changes under the eyes. Vital capacity studies now under way and determinations of the oxygen saturation of the arterial blood² have revealed definite impairment of respiratory function in these patients. One infant of 16 months presented a textbook picture³ of the deleterious effects of an anoxic anoxemia on the respiratory center. With the rise of temperature which accompanied a relapse, generalized convulsions occurred, including a spasmodic closure of the glottis. The infant suddenly presented the alarming picture of a cerebral failure of respiration, which necessitated the continued use of artificial respiration and cardiac stimulation to maintain life until a tracheotomy could be done. The spasm of the glottis relaxed shortly thereafter under the influence of sedatives, breathing was resumed through the larynx, and the tracheotomy wound could be closed. A laryngoscopic examination in this case subsequently showed no edema or gross exudate in the larynx or trachea. Other cases of sudden respira-

tory collapse among the infants on the ward further impressed upon us the possibility of an acute suffocation occurring as a result of the anoxemia.

Muscle and Joint Complication—Muscular atrophy out of proportion to the apparent severity or duration of the acute infection was one of the striking features of the illness. The loss of muscle tone was especially marked in the upper arms, thighs, and legs. A remarkable laxity of the joints was not infrequently observed, and sometimes it was sufficient to permit lateral manipulation of the knee, finger, and toe joints. Occasionally, a complete circumrotation of the digits (clockwise or counterclockwise) or of the individual phalangeal joints was possible. Hyperextension of the knees and fingers was one of the earliest and most constant observations. Occasionally, grating noises were heard within the joints. Local tenderness was noted only in those cases where the separation of adjacent surfaces was so great as to permit some tendon or other supporting structure to slip out of its accustomed anatomic position, giving the sudden pain and restricted motion previously described. Examination of these joints revealed local muscle spasm, tenderness, and restricted motion. Upon manipulation, the normal anatomic relationship of the joint would suddenly be restored, with relief of pain and freedom of motion. The excessive laxity of the joints gradually disappeared as the muscle tone returned. When the muscles then resumed their normal functions of joint support and weight-bearing, strain was removed from the various tendons, ligaments, and other structures completely unadapted to such tasks, and the symptoms disappeared.

Subcutaneous Emphysema, secondary to a mediastinal emphysema as revealed by x-ray, appeared suddenly after a violent coughing spell in a boy, aged 8, whose cough had been spasmodic and severe for a month. The morning following a bronchoscopic examination he developed a temperature of 104 F, was prostrated, and complained of a very sore throat. A previously dull pink

"poststrawberry" tongue had changed to a heavily coated one with the sides and papillae a brilliant red. The entire pharynx was intensely inflamed. The subcutaneous emphysema appeared six hours after the temperature rise and twenty-six hours after the bronchoscopic examination.

Differential Diagnosis

Because of the invariable association of an emphysema, a persistently edematous uvula, and enlarged papillae of the tongue in every patient in this group of 200 cases it is felt that possibly we have of late been dealing with a new clinical entity. The course and frequently encountered complications and debilitating aftereffects have likewise shown rather distinct differences from the more usually encountered respiratory infections, such as influenza, streptococcic sore throat, and bronchopneumonia.

Differing from influenza, the onset of the present infection was not characterized by severe aching pains throughout the body, back and extremities. A prominent coryza and injection of the conjunctivas were not seen, nor was an early irritative cough noted. Leukopenia with a predominance of lymphocytes was not found in the early stages. The bronchiolitis and associated emphysema as found in patients ill with influenza is characteristically accompanied by cyanosis, rapid labored breathing, and moist rales in the chest. None of these signs was noted in our patients. The necrotic lesions of the influenza bronchiolitis produce changes visible on x-ray. These were not seen in our study. Similarly, cases of bronchiolitis due to the *Bacillus mucosus encapsulatus* show coarse rales, scattered throughout the lungs, extreme dyspnea, and x-ray evidence of the multiple abscesses and cavities in the lungs.

In some of the patients this year the intensely inflamed throats seemed clinically indistinguishable from those of streptococcic origin, especially the ones with an extensive follicular exudate. However, a hemolytic streptococcus was

never found as the dominant organism. In a few cases a punctate eruption was noted on the soft palate. Thus, together with the intensely inflamed throat and brilliant strawberry tongue, suggested the diagnosis of scarlet fever. There was no circumoral pallor, however, the tongue did not peel as it does in scarlet fever, and there was no subsequent desquamation of the skin. A cervical adenitis did not develop, and the Rumpel-Leeds phenomenon was absent. However, one could never make a diagnosis of this epidemic bronchiolitis on the appearance of the mouth alone, the accompanying emphysema being an essential part of the picture.

Patients with an area of atelectasis at the apex have frequently been admitted to the hospital with a previous diagnosis of bronchopneumonia. They were toxic, had an increased respiratory rate, and occasionally had a dilatation of the nostrils and suggestive chest findings. Unless one had in mind the possibility of the emphysema being present along with scattered patches of partial atelectasis, the areas with an impaired percussion note and diminished breath sounds could readily suggest the presence of early bronchopneumonic lesions. The lung changes in these cases were never progressive, however, the inconstancy and metamorphosing character of the findings on physical examination being a striking feature. Localized fine rales and bronchial breathing were not heard. Occasionally the broncho vesicular breathing of the right apex was sufficiently pronounced to suggest bronchial breathing, but there was never a tubular quality of the sounds and the changes were never progressive. The patients were not dyspneic. There was no expiratory grunt or active dilatation of the alae nasi. Of greatest importance in differential diagnosis was the possible interruption of the respiratory rhythm through stimulation of interest or by command. The relatively low white blood cell count and, more especially, the normal sedimentation rate differed from the laboratory findings in a case of bronchopneumonia.

A chronic cough following an acute respiratory infection and accompanied by fatigue, muscle weakness, and a low-grade temperature might suggest an early tuberculous lesion. The differential diagnosis should not be difficult if the findings that characterize the present epidemic are all present and are given due consideration. It would seem probable that future attention will have to be given to the possibility of bronchiectatic lesions developing in the lungs of the untreated cases, where the emphysema, accompanied by alterations of the pulmonary ventilation and circulation, has persisted for long periods.

Summary

The characteristic findings, course, and deleterious aftereffects as presented by a group of some 200 patients observed in New York City since February, 1940, suggest that possibly we have been dealing with a new rather than a modified clinical entity this year. The illness has affected children and adults alike. In each patient an obstructive emphysema with variable sized patches of partial

atelectasis was found associated with a persistent edema of the uvula and enlargement of the papillae of the tongue. The acute stage was self-limited. Relapses were extremely common. The emphysema has persisted for indefinite periods, thus giving rise to an anoxic anoxemia. In infants at least this may result in acute suffocation from failure of the respiratory center. A chronic cough, dyspnea on exertion, depression, anorexia, and fatigue have frequently persisted for a discouragingly long time, necessitating repeated and prolonged absences from accustomed activities. Thus, the after-effects of the current infection, whatever its true nature may prove to be, far outweigh the importance of the acute stage and make the illness one to command our respect and concerted study. The challenge lies not in diagnosis alone but more especially in treatment and the prevention of complications.

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- 3 Laurens H. J. Physiology of Respiration. Brenemann Practice of Pediatrics vol 2, chap 38, p 28

"The September 24th issue of *Look*, beginning on page 36 had a most informative article entitled *Country Doctor*. It was accurate, truthful and presented the life of a country doctor in a kindly manner. I feel sure that the medical profession of the United States appreciates this type of article. Coming so soon after the article in *Life* referred to in our last article, one cannot fail to compare them, greatly to the credit of the *Look* article.

"The editorial in the tabloid, *Medical Economics*, the September issue is excellent and should be read by all. Also the article on Physicians' Incomes on page 38 is most interesting and well worth a few minutes careful perusal."—A recent editorial in the *Illinois Medical Journal*

"As far as I am concerned I intend to devote the rest of my life to the problem of developing man in his organic and spiritual entirety. For the quality of life is more important than life itself. We must now use theoretical and applied science not for the satisfaction of curiosity but for the betterment of the self and for the construction of the truly civilized man."—Dr Alexis Carrell

The Canadian Medical Association has informed the British Medical Association that homes of physicians in several provinces are ready to receive more than 1,100 children of British physicians, according to an announcement in the *Canadian Medical Association Journal*.

Ward 9 in the Hospital for the Relief of the Ruptured and Crippled on November 9 became a setting in the Black Forest when fifty crippled children gathered around Irene Wicker, the "Singing Lady" of the radio, who brought to them vividly the story of Goldilocks and the Three Bears.

It was an occasion for these little shut-ins arranged by the United Hospital Campaign and the National Broadcasting Company to bring a bright quarter of an hour into the ward.

Shouts of glee greeted the Singing Lady as she appeared, for many of the children had heard her stories and were anxious to see her.

Following the broadcast of "Goldilocks" Miss Wicker sat on the floor and told the children more stories and finally left in a chorus of cheers and gratitude. The arrangement for the broadcast was made by Edward B. Willmer, superintendent of the hospital, and Mrs. J. H. Reynolds, group leader of the United Hospital Campaign, Manhattan women's committee.

Therapeutics

CONFERENCES ON THERAPY

THREE years ago a series of therapeutic conferences was started for the purpose of instructing students at the Cornell University Medical College, but their function has broadened and they now serve an important role in the exchange of views between different departments in the institution, and they are largely attended by the attending and house staffs. These conferences are conducted jointly by the Departments of Medicine and Pharmacology with the collaboration of other departments and institutions. For each session a group of drugs, a therapeutic procedure, a symptom, or disease is selected as the topic for discussion. Practical procedures for the use of the therapeutic measure are outlined by a clinician, and a résumé of the experimental basis is presented by someone trained in physiology or pharmacology. Approximately half of the period is devoted to informal discussion in which the audience participates. Thus the opportunity is afforded for reviewing the basic principles underlying treatment, including a consideration of the validity of the existing evidence, throughout, special attention is given to controversial points. The conferences have been introduced to a wider audience by publication in the *Journal of the American Medical Association* where it is hoped they will serve as a demonstration of some of the advantages of this mode of teaching and lead to its adoption by other institutions. With the establishment of conferences in other medical centers, it appears most appropriate that the material be made available to local groups of physicians, and this can best be realized by publication in state medical journals. In furtherance of this plan a series of the Cornell conferences, as recorded by a stenotypist and slightly edited, has been arranged for publication in the *New York State Journal of Medicine*. This, the first conference of the present series, is concerned with the management of fever. The next will be devoted to the treatment of nephritis.

The Management of Fever

DR. MCKEEN CATTELL This conference will deal with the management of fever. The physiologic aspects will be discussed by Dr. Du Bois.

DR. EUGENE F. DU BOIS The question may well be asked. Can fever be managed? Also the question. Is it wise to try to manage it?

In discussing the physiologic aspects of fever I should like to bring out the difference between fever and its bad partner, infection, with which it is so often confused. We should consider fever as a symptom and also as a diagnostic aid and realize that if we try too much management we may lose a valuable help in diagnosis and prognosis. The fever by itself is quite well regulated by the temperature-regulating center. In normal people the center keeps the body temperature in a very narrow range. In fever, such as we find in infections, the center keeps the body within a wider range but a fairly definite range. For example, although the body can survive temperatures as low as 24 C (75 F) and

as high as 45 C (113 F), those limits are never approached in ordinary fevers. It is seldom that you find in fevers a temperature over 41 or 41.5 C (106-107 F).

We should remember that fever is a perfectly normal accompaniment of severe physical exercise, and it is just as well to consider the fact that most of the athletic records of the world have been made by athletes who have fever and also to remember that a good many animals and birds have temperatures that we consider high. For example, the cotton-tail rabbit has an internal temperature of 39.9 C (104 F), and the rabbit is quite an efficient animal when chased by a greyhound.

Certain fevers have relatively little toxemia, almost none. For example, hyperthermia, induced artificially, and the fever of exercise have no real toxemia. Then in malaria given therapeutically and in typhoid vaccine there is relatively little toxemia. So we have almost a pure picture of fever. In this type of fever the basal metabolism is increased. The total

metabolism is moderately increased. The carbohydrate stores of the body are used up rapidly because they are the most available foodstuffs and the water elimination is greatly increased.

For the purposes of discussion, we have to consider fever plus the infection, the ordinary type of fever encountered clinically. Here we have the same phenomenon of an increase in the basal metabolism roughly proportional to the degrees of temperature—an increase of 20 to 40 per cent or more. The total metabolism is increased but is not as high as in normal persons who are up and about. There is the same rapid exhaustion of the carbohydrate stores, which, as a rule, are low on account of inadequate diet, so that the body comes down to a metabolism of its own body fat and its own protein. In toxemias there is, as a rule, a very high destruction of body protein, two or three times the normal level, depending, I believe, more on the degree of toxemia than on anything else.

The most important physiologic change is the rapid diminution of the body water. Elimination of water is increased because of the increased vaporization from the skin, particularly during the periods that usually occur every day when the temperature drops. There is also the loss due to the increased respiration. It is, however, the diminished water intake that is the important factor. In normal people the chief sources of water intake are the so-called solid foods which are largely water. That source is greatly curtailed in fevers on account of the marked decrease in appetite.

There is also a disturbance of mineral metabolism in the low intake of mineral substances, particularly the chlorides.

Then, recently, people have been realizing and proving that the vitamin supplies are rapidly exhausted. The vitamin intake is greatly curtailed.

In long-continued infections we have the phenomena not only of the infection and the fever but also the phenomena of partial starvation. In clinical medicine we run into trouble whenever we depart from the normal diet and we should always take into account the consequences of such a departure.

In the few minutes that remain, I should like to say something about the mere physical aspects of heat balance.

This subject has been studied by us for a good many years. The simplest way of considering fever is the old idea that the temperature-regulating center is set at a definite level. It is fairly accurately adjusted in health at about 37 C (98.6 F). In fever, for some reason or other that we do not well understand—possibly a protective mechanism—it is set at a different level, and if this is done suddenly, the body finds itself perhaps three or four degrees too cold and responds in the way a normal man responds if his body is three or four degrees too cold. He responds with a chill. This occurs in certain diseases such as onset of pneumonia and malaria where that change takes place abruptly. The only way the body can produce enough heat in a short time is by means of severe exercise or its substitute, a chill.

When the temperature-regulating center is set more slowly at a new level, the body can adjust itself to the new temperature by increasing its heat production together with a relative diminution in heat loss, possibly an absolute diminution in heat loss with goose flesh and cold skin. Usually both production and loss go up together but the production exceeds the loss.

When the temperature-regulating center is set at a lower level than that previously maintained, the body finds itself too warm and responds in exactly the way a normal man does after exercise. There is an increased sweating and vaporization that can take care of enormous losses of heat in a relatively short time.

Slow falls can be obtained by increasing heat loss with a relatively diminished heat production and balance can be maintained at various levels, as you see—for example, in pneumonia or in the second week of typhoid fever where fairly level temperatures may be maintained at 40 C.

Skin temperature is increased in fever but this does not accomplish much in the way of increased heat loss. The rise in skin temperature of three or four degrees may increase radiation 25 per cent, but radiation seldom accounts for more than half the heat loss. Vaporization is the chief regulator.

There is another type of fever that I want to speak of briefly, high fever where the temperature-regulating center cannot keep control—for example, in heat stroke.

where more heat is poured into the body than can be dissipated. Then there is the condition where the temperature-regulating center loses control as in certain types of brain injury and in moribund patients with a premortal rise in temperature. In any high fever the tissues of the brain are damaged by the temperature itself.

DR. CATTELL. I think we will postpone discussion of this contribution and ask Dr. Modell to present now the pharmacologic aspects of the antipyretic drugs.

DR. WALTER MODELL. Here is a list of the more common antipyretics: (1) aniline derivatives—acetanilid, phenetid, acetophenetidin, (2) salicylates, (3) cinchona alkaloids—quinine, (4) pyrazolone derivatives—antipyrine, aminopyrine, (5) cinchoninic acid compounds—cinchophen and neocinchophen.

A number of drugs other than those listed reduce temperature. The drugs we consider antipyretics are those which, acting on the temperature center in doses that produce no other apparent effects except possibly that of analgesia, reduce body temperature when it is above normal. As a matter of fact some experiments indicate that antipyretics given to animals with normal temperatures may cause the body temperature to rise slightly. The definition excludes specific agents, such as sulfapyridine, which may bring down the temperature in pneumonia and depressants, such as alcohol, morphine, and general anesthetics, which reduce normal body temperature and produce a variety of other apparent changes. It is also characteristic of the antipyretic drugs that in the same small doses they act as analgesics and relieve a variety of pains and aches.

The antipyretics can be divided into the five chemical groups we have listed. I think a few words on the relationship between the pharmacologic action of the aniline derivatives and their chemical structure is worthwhile. These substances apparently derive their antipyretic action from the formation of para-aminophenol. The toxicity and potency depend largely on the rate at which para-aminophenol is formed in the body. A number of derivatives of para-aminophenol have antipyretic action, and there are a few generalizations that are useful in predicting just how active and how

toxic they may be. The toxicity and potency are inversely proportional to the length of the chain substituted either in the amino group or the hydroxy group. The substitution of an alkyl radical reduces toxicity and potency more than the substitution of an acetyl group. Toxicity and potency generally run hand in hand.

From the point of view of pharmacologic action the antipyretics can be considered together because they all produce their action by the same mechanism—an increase in the rate of dissipation of heat. It is occasionally stated that quinine is an exception and, perhaps, a preferable member of the group because it decreases the rate of heat production, but the best evidence is that quinine acts just as the other members of the group—namely, by increasing the rate of heat dissipation. Of course, we are not considering the action of quinine in the treatment of malaria.

The drugs act centrally. Application of the heat-regulating centers in the mid-brain produces a fall of temperature. Section of the brain just below the basal ganglion inhibits their action, and decerebration reverses their action.

The loss of heat is accomplished first of all by increasing the rate of perspiration so that heat is lost by evaporation. But if sweating is prevented by atropine, the antipyretic action persists. The other mechanism is cutaneous vasodilatation with increased loss of heat by radiation. There is still another possible mechanism by which these drugs operate. It has been emphasized by Barbour that hemoconcentration and hemodilution are important in the regulation of body temperature and loss of heat in fevers, hemoconcentration favoring fever and hemodilution favoring the loss of heat. In his experiments he has shown that if the blood is diluted by the introduction of saline or by phlebotomy fevers are reduced. If antipyretics are given, he finds a dilution of the blood which he believes favors heat loss both by perspiration and radiation. On the other hand, he finds that if antipyretics are given to normal animals there is no dilution of the blood.

Most of the members of this group, and because of limitation of time we have to consider them as a group, are absorbed

from the gastrointestinal tract with moderate rapidity. The peak of action is somewhere around one and one-half to two hours and the effect persists for three or four hours. There are too many members to consider dosage here, and for the same reason we will pass over the problems of elimination, which are about as varied as the number of different groups.

The toxicity of these substances is of great importance. In the old days, when one of the few pharmacologic effects that a physician could demonstrate to the patient was antipyresis, this was produced with a vengeance and sometimes with disastrous results. Even today, many physicians feel that if they cannot do anything else they can at least reduce the temperature. It should be borne in mind that if antipyretics are used too heroically and the temperature brought down too suddenly not only subnormal temperatures but general circulatory collapse may be produced.

The minor toxic symptoms of the different compounds are of importance. The coal-tar derivatives often produce nausea and vomiting, skin eruptions, and methemoglobinemia. The salicylates also produce gastric irritation and often, in large doses, dizziness, ringing in the ears, and visual disturbances. Cinchonism is produced by the cinchona alkaloids, sometimes by rather small doses.

So much has been said about the toxicity of the pyrazolone derivatives and they are in such bad odor that I think one can refrain from mentioning the fact that without the benefit of any minor toxic effects small doses of these drugs may produce leukopenia or agranulocytosis.

The cinchoninic acid derivatives are also in bad repute because small doses, without any warning signals of minor toxic symptoms, have often produced fatal acute yellow atrophy of the liver. As a matter of fact, the drug is especially prominent as a cause of acute yellow atrophy of the liver. In a recent issue of the *Journal of the American Medical Association*, 2 cases of liver damage produced by cinchophen were reported, 1 case was fatal. There are some interesting parallels in the two case reports. First, both victims were close relatives of physicians, one a wife and the other a son. Both were given a proprietary product, "guaiaesin," containing cinchophen,

which is marketed by the Massengill Manufacturing Company.

Taken as a whole, the salicylates are about the safest and most economical of the antipyretics. They are used widely and sometimes in very large doses in the treatment of rheumatic fever, yet serious toxic symptoms occur relatively rarely. The aniline derivatives are somewhat more toxic but, generally speaking, are safe drugs. Between the aminopyrine and cinchophen there is little to choose. These drugs should not be used as antipyretics.

DR. CATTELL. Dr. Niles, will you now discuss the management of fever?

DR. WALTER L. NILES. My remarks will be confined to the management of fever in general and will not include the treatment of any specific febrile diseases. If one has in mind the physiology of fever, which Dr. Du Bois has described, it is clear that the most important detail in its management is that of rest, both physical and mental. The patient should be put to bed, if possible in a large airy room, and everything done to relieve him of worrisome details. The services of a competent nurse are highly desirable and all but near relatives should be excluded from the room. There are two little details that contribute a good deal to the comfort and welfare of feverish patients, these are care of the mouth and nose. Both often become dry and encrusted, and good nursing care overcomes the discomfort and interference with breathing and swallowing.

We doctors sometimes forget that the sick person suffers greatly from the healthy in his psychologic reactions. He does not react to his surroundings and experiences in a normal manner. We should make allowances for this fact and be very particular to offer every bit of cheer and optimism at our command, as well as to promote the comfort of the patient in every detail.

Fever induces a rapid loss of water from the body, and this should be compensated for. Some years ago Dr. Du Bois said that the best way to guide adequate fluid intake is by observing the urine to see that it is dilute and colorless. That is a better guide than prescribing that the patient should have a certain number of cubic centimeters daily. The necessary quantity naturally varies in

different patients. Because of delirium or coma, patients may be unable to take sufficient water by mouth, in such an event it should be given either by hypodermoclysis or intravenously. The rectal route is bothersome to patients and not very effective, and we now seldom employ it. In recent times we have sometimes gone to extremes in the matter of fluids, and some patients suffer from water intoxication rather than from dehydration. The regulation of fluid intake is generally well controlled in the hospital, but the average patient in his own home does not get nearly enough fluid when he has a fever.

The next important consideration in the management of the patient with fever is that of diet. Fever induces a rapid loss of the body constituents, and in the long-continued fevers it is very important to prevent this loss as far as possible. Whether this is an important matter in fevers of short duration is not so clear, but it seems reasonable to expect that the convalescent period will be shorter if extreme losses are prevented. Drs. Coleman, Shaffer and Du Bois proved many years ago that patients with typhoid fever could be maintained in nitrogen balance and material losses of weight prevented. Patients so treated were in far better physical and mental condition throughout the course of the disease, complications were fewer, and the convalescent period was materially shortened. It is frequently difficult to induce patients to take sufficient quantities of food, but competent nursing usually overcomes this. It cannot be doubted that it is extremely important for patients with long-continued fevers to be provided with an adequate diet.

In fevers of short duration it is usually difficult to take very much food. Again skillful nursing can overcome this to a large degree. When a patient has nausea or vomiting or abdominal distention, the difficulties are increased, and it may be impossible to give very much food. However, it seems to me that we should make an effort to give patients adequate diets in the fevers of short duration.

Dr. Du Bois has mentioned the rapid loss of vitamins in feverish conditions and in long-continued fevers. This may develop into a serious complication. There is a patient in the hospital who, due

to an infection, has had fever for the better part of a year. When this patient came to the hospital she presented a classic picture of pellagra, which has entirely cleared by the administration of appropriate vitamins. This picture, to a lesser degree, is very common, and it is sound therapy during convalescence to give additional quantities of vitamins.

Nowadays, we seldom attempt to control fever by administering antipyretics, and hydrotherapy is far less frequently employed than heretofore. Formerly, much of the time of the nursing staff was taken up in giving baths of some sort or other, but now, aside from the daily bed bath, comparatively few patients receive hydrotherapy. I think the best guide for prescribing hydrotherapy is not so much the height of the fever but rather the comfort of the patient. Many feverish patients are restless, irritable, and generally uncomfortable, and they can be made more comfortable by a sponge bath. Tub baths are very seldom used, a simple sponge bath or wet sheet or a sprinkle bath is generally adequate.

This brings up the fundamental question whether fever is beneficial or harmful for the patient. I do not believe this question can be definitely answered today. When the fever is extremely high, it may of itself become harmful and should be combated by hydrotherapy, but, as I have indicated, the average fever does not appear to be harmful. There is one condition that we have rarely seen in recent times in which active hydrotherapy is of vital importance and that is heat stroke or insolation. In this condition temperatures may reach extreme heights, which, if maintained for many hours, directly affect the mortality. In these cases the temperature should be actively combated by putting the patient into a tub of water at about 80 F and gradually reducing the temperature to about 60 F by adding ice. With this treatment the temperature will usually fall quite promptly and no one can doubt that the patient is benefited thereby.

In certain cerebral conditions that are accompanied by high fevers, hydrotherapy is indicated and is probably a benefit at times.

So the important indications to keep in mind in the management of fever are first, physical and mental rest, second,

adequate quantities of water, third, more or less adequate caloric intake, fourth, hydrotherapy, and fifth, restoration of vitamins

DR CATTELL Don't you ever use drugs?

DR. NILES I should say very rarely

DR CATTELL An almost universal accompaniment of childhood seems to be fever, and I will call on Dr John A Washington to tell us what he does about it.

DR JOHN A WASHINGTON The indications for treating fever in infants and children are based as much upon the patient's reaction to the fever as upon the height of the fever itself. The most common reaction is restlessness and fretfulness. The occurrence of such symptoms varies in different patients. With a temperature of 39.5 or 40 C, one child may thrash about in his crib in great discomfort, while another may lie placidly playing with his rattle. Obviously, it is important to reduce the first child's fever while the second child might be safely left alone, at least to the point of determining whether the temperature is rising or falling.

A more distressing reaction to fever is the occurrence of a convulsion, and a reduction of the temperature is, of course, indicated in the presence of one of these so-called febrile convulsions. A warning of an impending convulsion may present itself in the form of a tremor or twitching of the hands and feet. By reducing the fever in such a child a convulsion may well be avoided.

If restlessness and other untoward symptoms do not occur, the institution of antipyretic therapy depends primarily upon the height of the fever, but one is undoubtedly influenced by the child's known reaction to previous febrile attacks and last, but not least, by who is caring for him. With the patient in a hospital one tends to do less about fever than when a frightened parent who is inexperienced in caring for a sick child is calling up every few hours. In hospital practice, fever in a placid baby is usually allowed to reach 40 C without the patient being disturbed by treatment. Temperatures higher than 40 C are usually treated. However, at times one's clinical judgment prompts one to move the level for the treatment of fever up or

down, especially as the care of any given case over a period of days enables one to know what to expect. Certainly temperatures of 41 C are always treated.

The most widely used way of reducing high fever is by sponging with tepid water containing about 35 per cent alcohol. To a number of patients this is soothing while it is being carried out. If it is irritating to the patient, one must decide whether the expected reduction in fever is worth the excitement. Wrapping the patient in a sheet wet with tepid water and sprinkled at intervals with colder and colder water over a period of fifteen to thirty minutes is a useful procedure and may be less irritating than a sponge. In some clinics it is the routine method. Only one layer of cloth is desirable as—just as with the alcohol sponge—it is the evaporation more than the temperature of the solution that does the cooling. If the child is convulsing, this so-called wet-pack method of reducing the fever is preferable to sponging because it involves less stimulation than the repeated application of a sponge. The use of tepid water sponges without alcohol is more common because it is simpler, but it is not as effective as the alcohol solution, and if it irritates the patient it is usually of little benefit.

Of course, in dehydrated patients, the giving of fluids by mouth or by other routes will often reduce a fever.

Drug therapy, when it is used, is pretty well limited to the employment of aspirin. This can be successfully administered to many infants by crushing a portion of a tablet in a spoon and dissolving or suspending it in fruit juice or other liquid. The dosage is not accurately calculated, but a gram of the drug for every year of life is a useful rule of thumb—for younger children anyway. Certainly, this form of therapy is the one of choice for older children who cooperate in taking medicine and who are being treated at home or for those whose temperatures are not dangerously high. Aspirin may, of course, be given following hydrotherapy to help prevent another rise in temperature. In sick babies where a struggle over such medication seems likely and where one wants to avoid provoking the tendency to vomit any more than is necessary, the drug is not so useful. It is hardly necessary to mention

that the use of specific chemotherapeutic agents, notably sulfapyridine in pneumonia, has greatly decreased the need for antipyretic therapy.

DR. CATTELL A number of questions have arisen, and we can now pursue them further in informal discussion.

STUDENT May I ask to what extent the toxic destruction of protein is due to the actual toxemia and to what extent to a negative caloric balance? How are we combating the condition in giving a high protein intake?

DR. CATTELL Would you care to answer that, Dr. Du Bois?

DR. DU BOIS In normal people you can reduce the protein nitrogen output to low levels by a liberal diet low in nitrogen—that is, to a so-called nitrogen minimum—but you cannot do that in fever. You may give more than enough calories to cover the output and yet the nitrogen output is not depressed to anywhere near the minimum that obtains in health. That seems to be the best evidence of toxic destruction. Both factors are probably important. Lack of calories and toxic destruction. It is impossible to tell just how much is due to one and how much to the other.

STUDENT I would like to ask Dr. Modell if sulfapyridine and sulfanilamide are nonspecific antipyretics?

DR. MODELL We were once very much impressed by the chemical similarity between para-aminophenol and sulfanilamide, and we considered that question. Offhand, the evidence is against an antipyretic action because sulfanilamide is given to a patient with pneumonia and there is no immediate effect on the fever, whereas aspirin will reduce the fever. I think that is the best answer. If they were general antipyretics, even if they did not act specifically against the infection, they would produce a marked fall in temperature. We did a number of experiments which at first we thought were suggestive of an antipyretic action, but, approaching the problem from a different angle, we concluded otherwise.

DR. CHARLES H. WHEELER I think our experience in the ward with sulfapyridine has been a little different. We have all seen patients die of lobar pneumonia who apparently were unaffected by the sulfapyridine and yet had had a marked drop in their temperature as a result of

sulfapyridine. I should like to ask Dr. Niles if that has been his experience.

DR. NILES Certainly, your observation is correct, and such cases have been seen frequently. It is my own feeling that sulfapyridine has distinct antipyretic effects. However, an example that does not tend to sustain this observation is subacute endocarditis, where in our experience the temperature did not regularly fall following treatment with sulfapyridine.

INTERN We reported 20 cases of subacute endocarditis treated with sulfapyridine in which the temperature runs, in general, lower—perhaps one degree centigrade. We start with a temperature of 39 C and perhaps get down to 38 C. It may be due to some other effect, but there is a change in temperature. I think this is general when the drug is given for a period of time.

DR. DU BOIS There is also a diminution in the bacterial content of the blood.

DR. CATTELL Dr. Modell's point is that there is no immediate antipyretic effect such as would be expected from an antipyretic drug. The temperature reduction does not occur until a day or so later.

DR. MODELL It does not act as does the salicylate. There are experiments in which fever was produced by the injection of turpentine under the skin in animals, and sulfanilamide was without effect.

DR. WHEELER I do not think we have seen so much effect with sulfanilamide. It is not unusual in a patient with pneumonia who is given sulfapyridine to see a considerable reduction of temperature, even though the pneumonia itself may seem relatively unaffected.

DR. MODELL You are dealing with a specific agent. If sulfanilamide or sulfapyridine had nonspecific antipyretic properties then they should act as such in diseases in which they do not exert a specific antibacterial action. For example, in pneumonia just as a salicylate does. But it is sulfapyridine that has the specific antipneumococcal action, rather than sulfanilamide, which produces the fall in temperature in pneumonia.

DR. CATTELL In case anyone should advocate vigorous treatment of fever, I came forearmed with a statement, made

by Dr Welch many years ago, which I should like to read "Enlightened physicians have held the opinion that fever is a process which aids in the elimination or destruction of injurious substances which gain access to the body. The doctrine of evolution indicates that a process which characterizes the reaction of all warm-blooded animals against the invasion of harmful substances, has not been developed to so wide an extent and has not been retained with such pertinacity without subserving some useful purpose." I judge that this group would agree with that statement, and in the absence of specific indications no attempt would be made to combat fever *per se* with drugs.

DR GOLD: Would the pediatricians agree to that—for example, in a child with grippe and a temperature of 104 or 105 F, who is restless and seems to be in distress? When the temperature is brought down to 100 F by a few grains of aspirin the child begins to look quite well. Then the temperature goes up again to 104 or 105 F in the evening. Again the child looks sick. It seems to me that the bringing down of the fever by antipyretic drugs serves a useful purpose. I wonder if Dr Washington would say something about that.

DR WASHINGTON: I certainly do not see why it does any harm when the child is restless. It must save a great deal of exertion.

DR EPHRAIM SHORR: I wonder, Dr Washington, if that may not in part be due to what I gather is a somewhat excessive thermal reaction of children to infections. With an adult, as Dr Du Bois pointed out, the range is quite restricted, but with children I believe that the reactions in terms of degree of infection are excessive, and may it not be that this excessive response warrants its wider use in pediatrics?

DR WASHINGTON: That is probably true. We are very much afraid of convulsions when temperatures get up to 104 F.

DR DU BOIS: How about temperature regulation in very young children and premature babies? Do you get excessive temperatures in them?

DR WASHINGTON: I think it depends entirely upon the environment of the premature infant. I remember we once

had a heat spell in Baltimore when the temperature went up to 107 F. We had no control of the temperature in the room and the prematures went right up to 107 F too, and we lost quite a few of them.

DR JOHN E. DEITRICK: I should like to ask Dr Du Bois if there are any experiments to show whether the change in the heat-regulating center is due to the foreign protein or some substance produced by the foreign protein. Would an analysis of the blood show any change in a patient with fever produced by typhoid vaccine? Has anyone followed changes either in the antibody response or the antigens of the blood preceding fever?

DR DU BOIS: I do not know of any direct evidence. The amount of foreign protein given in an injection of anti-typhoid vaccine is small, and it is greatly diluted by the time it is mixed with the blood so I doubt if it could be found. There is an enormous amount of literature on the causation of fever, so enormous that it has always discouraged me when I tried to review it. I do not believe the answer has been found as yet. I do think, however, there is a great deal in the point of view presented by Dr Welch—that fever may be a salutatory reaction on the part of the body. However, just because it has existed for many generations does not prove it is beneficial.

STUDENT: Is delirium more apt to accompany fever in children than to accompany it in adults?

DR CATTELL: That may require answers from two sources.

DR WASHINGTON: In small children one is never quite sure what constitutes delirium. They thrash about in their cribs so much anyway. But I am inclined to think that delirium is more apt to occur in children.

DR NILES: I should say children are much more subject to delirium with high fever.

DR GOLD: Do we remain on record here as holding that fever is good for grownups?

DR NILES: I am sure that cannot be answered with any certainty.

DR DEITRICK: The production of antibodies has been shown to increase with a rise in temperature, and that is one of the reasons why it was thought a poor idea to lower the temperature as long as it did not go beyond physiologic

limits—that is, above 40° C—where the patient may have a delirium

DR JANET TRAVELL The use of fever therapy in some conditions is evidence of the beneficial effects of fever, is it not?

DR CATTELL I should think so I suppose we have no evidence that the fever itself is deleterious if it is not of too high a degree Is there any specific damage we can relate to the fact that the patient had fever? How about the effect of fever on the blood elements, Dr Forkner? Is there any recognized effect?

DR CLAUDE E FORKNER I do not think so However, the patient with very low blood cell counts and low hemoglobin values—about 5-Gm hemoglobin or below 2,000,000 red cells—commonly has fever without any other explanation for it.

DR CATTELL The material presented at this conference might be summarized by the statement that fever, as a rule, does not call for treatment, and when something must be done the only agent required is water—internally to combat dehydration and externally for its cooling properties But there is a great deal more to the problem of the management of fever, and the application of our knowledge of the physiology of temperature regulation provides a rational basis for dealing with the various special problems which may arise Temperature control in fever is, in all its essentials, similar to that operating normally The thermo-regulating center is merely “set” at a higher level by some little-understood action of bacterial toxins or foreign proteins

Since fever is a sign of a pathologic process somewhere in the body, the diagnosis and treatment of the underlying disease represent the primary approach to the problem A striking example is the reduction in the fever of a pneumonia

patient following sulfapyridine therapy Fever per se rarely requires special treatment other than the general measures applicable to acute illness in general Special emphasis is put on the importance of complete rest—both physical and mental—and on the details of nursing care The importance of an adequate caloric intake, sufficient to cover the increased expenditure of energy due to the fever, has been stressed, and the diet should include a high content of vitamins Additional fluid is required in the presence of a fever, and an adequate intake should be maintained, here the volume and specific gravity of the urine are the best guides Hydrotherapy is now resorted to less frequently, but it is still utilized in the form of the sponge bath, the comfort of the patient being the indication rather than the hope of any useful reduction in fever

It appears that drug therapy has very little place Fever is regarded as one of the defensive mechanisms against infections, and in the absence of special indications procedures for the reduction of fever are not pushed Infants and small children are exceptions, since in early life temperature control is less perfect and infections are likely to give rise to high fevers which may lead to secondary complications such as delirium or convulsions It is the consensus of the conference that antipyretic drugs may be used with benefit in these cases

The pharmacologic action of the antipyretic group of drugs has been briefly reviewed In the presence of fever they reduce the temperature by a primary action on the heat-regulating center in the brain, but in its absence the body temperature is usually not influenced All these substances produce, on occasion, toxic symptoms, some of which are serious The salicylates are considered the safest and are, therefore, the most desirable antipyretics for general use

PREPAREDNESS ON THE HOME FRONT

Preparedness means not only readiness for the eventuality of real conflict but also being prepared to care for the millions that are not actually engaged in strife of any sort—the folk at home. War is the respecter of no person, regardless of age or station in life. Though a family may be thousands of miles from a battle scene, the effects of battle are to be observed in that

same family, and it is to the medical man that most of these folk will appeal in time of distress

We pray that we may all keep our heads and that we may maintain an even keel, at the same time we pray that, if there comes a time when the medical profession receives an M-Day call, that same group will answer, “We are ready!”

—*Journal of the Ind Med Assn*

Medical News

Emergency Blood for War Wounded

The American Red Cross New York Chapter is distributing the leaflet printed below—Editor

Do you want to do something definitely worth while for wounded civilians and soldiers in England?

The last great war piled up huge mortality lists mainly because at the critical moment there was not sufficient blood on the spot to be used for transfusions necessary to save life.

Under the confused conditions resulting from battle and invasion, transfusions of fresh blood, with the necessary testing for "types" of blood, become difficult if not impossible in the field of action and in civilian centers where there are large numbers of wounded.

You will be interested to know that science has only very recently found a new means of preparing blood. This blood can immediately be used for transfusions wherever necessary and does not need to be "typed."

This new method segregates the liquid part of the blood, known as blood plasma, from the red corpuscles. This plasma is the most essential part of the blood for war wounded and "shock" cases. It can be bottled in convenient sized flasks and shipped to the immediate point of need to be used at once or at any time within six months to a year.

You can realize how invaluable this will be in helping to save the lives of the war wounded, including the thousands of civilian casualties to be expected in modern war.

The American Red Cross at the request of the

British Red Cross is now acting, in cooperation with the Blood Transfusion Betterment Association, to obtain a supply of such plasma to be sent abroad for the purpose of saving life.

While you cannot aid these war stricken people in person, you are offered by this means an opportunity to give of yourself and to help them far more than would be possible even by your presence.

If you care to make a voluntary donation of your blood and are between the ages of 21 and 60 and in good health, this can be done at one of the leading hospitals in New York City under the supervision of physicians of recognized standing who are members of the medical staffs of such hospitals and who will be acting under the supervision of the Board of Medical Control of the Association which is composed of leading specialists in this field.

The entire process of taking blood occupies less than a half hour after which one's normal activities may be continued as usual.

The Red Cross, the Blood Transfusion Betterment Association, the hospitals, and the doctors are all voluntarily donating their facilities and services to make available this new aid, which has never before been possible, to the victims of war.

If you will telephone Sacramento 2-8950 or will communicate with the Chapter by mail (315 Lexington Avenue), a definite appointment can be made at a hospital convenient to you.

Your gift will be most gratefully received in the name of humanity.

County News

Allegany County

Dr William F Reedy, of Wellsville, was chosen president of the county society at the annual meeting held in Belmont on October 31.

Other officers were elected as follows:

Dr Loren P Bly, Cuba, vice-president, Dr Edwin F Comstock, Wellsville, secretary, and Dr R. W Blaisdell, Wellsville, treasurer, the two last named were re-elected.

The society was addressed by Hugh D Chamberlain, Canadea, chairman of the draft board in the northern district of the county, who suggested the recommendation to the Board of Supervisors of three additional medical examiners to pass on men in the draft.

The society recommended Dr H K Hardy, of Rushford, Dr Francis Tisdale, of Canaseraga, and Dr R. O Hitchcock, of Alfred.

Dr Lawrence Older and Dr Bly, both of Cuba, were selected as a committee to work with state and national committees for health preparedness.

Broome County

Dr Byron Haskin, 68, for thirty-three years a practicing physician of Theresa, died at his home on November 7.

In addition to being active in the affairs of his church he had served as a member of the school

board, as a trustee of the village for a term of years, and as health officer.

Chautauqua County

Dr Frederick R. Weedon, director of the municipal laboratories, spoke on "Chemical Warfare Gases" at the dinner meeting of the Jamestown Medical Society on October 24. Dr D C Perkins presided.

Members of the Southwestern New York Chapter, Reserve Officers' Association, joined with the society to hear the speaker.

Chemung County

The county society met on October 30 at the Arnot-Ogden Hospital to hear an address on "The Relation of Allergy to General Practice" by Dr Will Cook Spain of the New York Post Graduate Hospital.

The county society has revived the movement to assess the city and county for care given relief recipients in the hospitals.

The matter was discussed by the physicians' committee on October 24 at Arnot-Ogden Hospital at a meeting to which City Manager Klebes, City Welfare Director Joseph F Klenzle, County Welfare Commissioner Harry A. Hillman, and Veterans' Relief Director Charles Epstein were invited.

The four officials were asked their views about possibly paying physicians for the care they give hospitalized indigents, but no definite proposition was made.

The meeting ended after the officials were notified that a further study of the question would be made by the physicians and that the city and county would be contacted again. The city and county now pay for care given relief recipients at their homes and at public clinics. The city has two physicians—Dr S L Larson and Dr Francis S Creighton—for that purpose, and the county pays for care given its dependents outside the hospitals.

Delaware County

Dr Charles A. Perry, of Albany, gave a talk on pneumonia and its treatment with sulfa-pyrimidine at the quarterly meeting of the county society on October 22 in Walton.

At the business session it was agreed that the committee on welfare and public relations would soon meet with a committee from the county welfare department to discuss a fee schedule which the society has formulated and also to discuss new forms physicians must fill out on welfare cases. Dr T C Monaco, president of the society, presided.

Erie County

The Buffalo Academy of Medicine observed a "Pediatric Night" on October 30 with an address on "Parasitic Infestations in Children" by Dr Willard H Wright, of Washington, D C. The section of surgery on November 6 heard a paper on "Various Types of Ulcerative Colitis," by Dr J A Bergen, Mayo Clinic. A "Post-Graduate Night of Urology" was held on November 13 with addresses by Buffalo urologists.

Organized "as an incentive for better work on the part of the general practitioner," the Association of Family Physicians has elected these officers: president, Dr Frederick W Filsinger, vice-president, Dr Arthur J Burkel, secretary, Dr Louis G Farris, and treasurer, Dr William H Jones.

"Our objectives are to protect to a greater degree the interests of the patients, as well as those of the family physicians," Dr Filsinger said, as reported in the *Buffalo Evening News*, "also, to encourage a higher standardization of the general practice of medicine and the ethical practice thereof, to encourage greater interest in all community movements relating to health, disease, and sanitation, and to demand a greater recognition of the family physicians by the hospitals. It is not in opposition to the county society but rather a helpful influence."

Program plans of the Buffalo Women Physicians' League for the coming months have been announced by Dr Rose M Lenahan, publicity chairman.

Dr Ivan Hekuman will discuss "Diabetes" at the meeting on December 2 in the home of Dr Frances L Sapowitch.

Dr Harriet Hosmer will be hostess to members of the group in her home for the league's Christmas party—date to be announced.

Dr Carl E Arbesman will speak on "Allergy" at the meeting scheduled for January 6 in the home of Dr Alice Murray.

The February meeting of the group will be held jointly with women lawyers and dentists in Buffalo. Date and place will be settled later. Dr Helen Toskov is president of the league.

Franklin County

Dr Arthur Vorwald, of Saranac Lake, was elected president of the county society at its annual luncheon and meeting in Malone on October 23.

Dr F F Finney, of Malone, was chosen vice-president, Dr Daisy VanDyke, of Malone, secretary-treasurer, and Dr Daniel Brumfield, of Saranac Lake, censor for three years. The society elected Dr C C Trembley, of Saranac Lake, as delegate to the meeting of the state organization with Dr John E White, of Malone, as alternate. Scientific papers were presented by Dr William Gaspar, of St Regis Falls, Dr R G Perkins, of Malone, and Dr P E Stamatiades, of Brushton.

Kings County

In the Courses in Contemporary Medicine, Dr Carl Henry Laws will speak on December 2 at 4 00 P.M. on "Surgical Conditions in Infancy and Childhood," and Dr Irving Gray at 4 45 on "Occupational Diseases." On December 4 Dr Meyer Rabinowitz will speak on "Granulomas" at 4 00 and Dr Robert F Barber on "Traumatic Diseases—Surgical Aspect" at 4 45. On December 16 Dr Frank B Cross will speak on "Adenopathies" at 4 00 and Dr Thomas A McGoldrick on "Traumatic Diseases—Medical Aspect" at 4 45.

At the meeting held November 19, the Kings County Society went on record as approving the Medical Expense Fund of New York, Inc. This approval does not preclude the consideration of other medical expense plans that might be presented to the society.

Madison County

Dr Howard Beach was elected president of the county society on October 31 at its annual dinner meeting in Oneida. He succeeds Dr Everett T Centerwall, Morrisville.

Other officers chosen are Dr Eugene W Carpenter, vice-president, Dr Paul A Ferrara, treasurer, and Dr Robert L Crockett, to membership on the board of censors. Dr Lee S Preston was re-elected secretary.

The dinner speaker was Dr Joseph A Lawrence, Albany, executive secretary of the State Society. The county society is one of the oldest in the state, founded in 1806.

The program opened at 4 30, and Dr Arthur E Harris, Syracuse University, talked on "The Status of Present Day Immunology." At the night session Dr Clyde O Barney, Syracuse, chose for his subject, "Appendicitis," Dr Henry H Haft, Syracuse, "Dyspepsia," and Dr Nathan P Sears, "The Management of Vaginal Bleeding at the Menopause."

Nassau County

The county society met with the county dental society on November 18 at the Garden City Hotel and heard an address by Dr Louis C Kress, director, Division of Cancer Control, State Department of Health, on "Cancer of the Mouth." At the meeting on October 29 the topics and

speakers were "Some Recent Advances in Cancer Research" by Dr Clarence Cook Little, managing director of American Society for the Control of Cancer, and "Cancer of the Female Pelvis," by Dr William P. Healy, gynecologist, Memorial Hospital, New York City.

The secret of Nassau County's good health, as disclosed in the *Nassau Review Star* by J. Louis Neff, executive secretary of the county society, is that—"Every person in Nassau County is able to have his own family doctor. Thanks to the progressive vision of our county authorities and the cooperation of the doctors, the man without money is not compelled to herd himself into crowded clinics and wait long hours for a few minutes of casual attention from an overcrowded doctor. The relief authorities permit him to select his own physician who treats him in his own private office where he is able to give him just as good attention as he gives his paying patients. There is no distinction between 'clinic patients' and 'private patients.' All patients are private patients of the doctor they select. If the family is receiving assistance from the relief authorities, the doctor is paid a small fee for this service. If the family is not in this group and is still unable to pay for medical care, every doctor in the medical society is pledged to do his share in seeing to it that no one in the county goes without the attention he needs. The local health and welfare agencies have doctors in every community who cooperate with them. Cases presenting special problems are helped by the office of the society."

New York County

The program of the stated meeting of The New York Academy of Medicine on November 7 was as follows: Newer Knowledge of Vitamins B and K—(a) "Vitamin B Complex," by Dr Norman Jolliffe, associate professor of medicine, New York University College of Medicine, (b) "Vitamin K," by Dr William DeWitt Andrus, associate professor of surgery, Cornell University Medical College.

Onondaga County

At the meeting of the county society on November 4, papers were read by Dr. Wardner D. Ayer, on "Chronic Cerebral Disease," and Dr. A. C. Silverman, on "Outbreak of Polomyelitis in a Child-Caring Institution in Syracuse."

A plan whereby each physician in Onondaga County receives a certain salary for the care of medical welfare patients was inducted into service on September 1, 1940, says the county *Bulletin*.

By trying the new idea which maintains the principle of free choice, much red tape is eliminated both for the doctor and the Welfare Department. No longer is it necessary for the doctor to make out a separate report on each individual case. A cumulative report is made once or twice each month.

It is understood that this plan is to be tried for six months or one year, after which time actuarial figures will be available on which the future of the plan will be based, or a return to the fee system might be deemed best by the authorities representing the Welfare Department and the county society.

Due credit must be given to the Public Rela-

tions Committee and the Welfare Department for the months of necessary intensive preparation for the evolution of the plan.

Ontario County

Dr. Robert George Cook, 76, former head of Brigham Hall Hospital, who died at his home in Canandaigua on October 25, was a past president of both the Canandaigua and the county medical societies.

Putnam County

At the monthly meeting of the county society held on October 2 at the Gypsy Trail Club, Carmel, Dr. Michael A. Cassidy, assistant gynecologist at Vanderbilt Clinic, spoke upon "Progress in Gynecology," and Dr. Lawrence Q. Crawley, assistant obstetrician at Lenox Hill Hospital, spoke upon "Progress in Obstetrics."

At the monthly meeting of the society held on November 6 at the Gypsy Trail Club, the speaker was Dr. Frederick Randolph Bailey, assistant physician at the Presbyterian Hospital in New York City, and the subject was "Progress in Drug Therapy."

The officers of the society for 1940-1941, elected at the annual meeting, are as follows: president, Dr. Robert S. Cleaver, Brewster; vice-president, Dr. John T. Jenkin, Lake Mahopac; treasurer, Dr. Alexander Vanderburgh, Brewster; secretary, Dr. John T. Jenkin, Lake Mahopac.—Reported by John T. Jenkin, M.D., Secretary.

Queens County

The Rockaway Medical Society met on October 17 at the Lawrence Country Club. Following dinner the members heard Dr. William J. Hoffman, guest speaker, discuss "Diagnosis of Breast Tumors."

Saratoga County

Dr. Gilbert Pasquera, of Mount McGregor, was elected president of the county society at the annual meeting on October 30 at Newman's Lake House, Saratoga Springs. He succeeds Dr. Ralph B. Post, of Ballston Spa.

Other officers elected were: Dr. Mark D. Duby, Schuylerville, vice-president; Dr. Malcolm J. Magovern, Saratoga Springs, secretary; and Dr. W. John Maby, Mechanicville, treasurer.

The meeting featured an address by Dr. Edgar M. Medler of the Metropolitan Sanatorium at Mount McGregor, who discussed recent laboratory advances in the diagnosis of pulmonary tuberculosis.

Schenectady County

Dr. John Scudder, surgical pathologist, addressed the county society in the Nurses' Home Auditorium of Ellis Hospital on November 12.

A member of the School of Medicine at Columbia University, Dr. Scudder spoke on "Shock, Blood Studies as a Guide to Therapy."

Suffolk County

Dr. William H. Ross, of Brentwood, has been designated by Governor Lehman as chairman of the Medical Advisory Board for the draft in Suffolk County. Other members of the board are Dr. David Corcoran, of Central Islip; Dr.

Edward R. Hildreth, Dr. Harry McGrath, and Dr. Carl W. Cohoon, of Bay Shore, Dr. Frank S. Child, of Port Jefferson, Dr. Charles Taintor of Port Jefferson Station, and Dr. Paul Dieffenbacher, of Southold

Westchester County

Dr. Albert Clark Benedict, 97, physician who practiced in Yonkers sixty years and who was Police Surgeon for twenty-nine years before he retired in 1922, died on October 29

Deaths of New York State Physicians

Name	Age	Medical School	Date of Death	Residence
Solomon S. Barnett	77	P & S N Y	October 30	Manhattan
Albert C. Benedict	97	P & S N Y	October 29	Yonkers
Joseph P. Brennan	56	Buffalo	September 28	Buffalo
Albert A. Getman	52	N Y Hom	October 28	Syracuse
Byron Haskin	68	Queens, Canada	November 7	Theresa
Mark Manley	72	L I C Hosp	November 7	Brooklyn
Florence Mikulski	46	Buffalo	October 24	Buffalo
Edgar Montealegre	57	Hahne. Phila.	November 1	Manhattan
George J. Plehn	46	Cornell	September 6	Manhattan
Albert E. Sumner	73	P & S N Y	October 31	Richmond Hill

GREAT BRITAIN NEEDS

SURGICAL EQUIPMENT, MEDICAL SUPPLIES, DRUGS, SERUMS, HOSPITAL BEDS, etc TO MEET THE GREATEST CRISIS IN HER HISTORY!

The Medical and Surgical Supply Committee, composed of 250 physicians and surgeons in principal cities throughout the United States, respectfully solicits your help. *The need is urgent. The time is short. Please respond generously and today.*

The drugs most urgently needed are *antiseptics, cardiac and respiratory stimulants, sedatives, ampoules, sulfamidamide, sulfapyridine, vitamins, tonic preparations, food concentrates.*

Supplies of these and other useful drugs, which may have remained unused in your office closet, on your shelves, or in your storeroom, together with instruments and equipment, old or new, will be warmly welcomed. A recent cable reads: "Need equipment such as rubber sheeting, hot water bottles."

Send them to the address given below or telephone LEXington 2-3970 and they will be collected.

MEDICAL AND SURGICAL SUPPLY COMMITTEE
OF AMERICA
420 LEXINGTON AVENUE
NEW YORK CITY

MUST HAVE BEEN GOOD ANYWAY

Have you ever had difficulty trying to read the penmanship of a doctor? After obtaining the medicine, one patient took the prescription and used it for years as a railway pass, twice as an invitation to a dance, once as a complimentary ticket to a show, and later as a recommendation from his employer. And in the evening, his daughter played it on the piano—*Mfg and Indus Eng*

CHANCE OF A LIFETIME

A doctor's wife decided to give a formal reception so she summoned her maid to give her instructions—saying "Bridget, I want you to stand at the drawing room door and call the guests' names as they arrive."

"Very good, ma'am," said Bridget happily. "I've been wanting to do that for years! I suppose the first thing that comes into me head will do"—*Medical World*

Hospital News

A Fine Example of Foresight in Hospital Planning

CERTAINLY no one expected that the Lake Shore Limited would leave the rails at the "gulf curve" at Little Falls on that tragic night and inundate the local hospital to almost double its capacity with the torn and dying victims. Catastrophes are never expected. But this one found the hospital ready, for it was planned for catastrophe with rare foresight two years ago. The story of it was told on October 8 by Dr. H. D. Vickers in a paper read before the Herkimer County Medical Society. As reported in the local papers, he said in part:

"There are about 11,000 people in the city of Little Falls, and the Little Falls Hospital, an institution of 52 adult beds, nicely fulfills their medical needs. It is unusual that such a small hospital could adapt itself instantly to the demands of a major catastrophe. Normally operating on a 45-bed basis, the hospital admitted 83 injured persons in those early morning hours, and these were in addition to those who were already patients in the hospital.

"This preparedness was the result of thought and planning that took place about two years ago. When an addition was planned for the Little Falls Hospital, the possibility of a catastrophe happening in Little Falls was considered and provision was made for it. For example, private rooms were built large enough to accommodate two beds, sun parlors were broad enough to be made into wards and the necessary lights and wiring were installed, corridors were made large enough for beds, an extra surgery as well as a separate orthopedic fracture room were made, and even reception rooms were planned to be used in an emergency.

"Further than this, the hospital staff, at several of its meetings, had discussed the possibility of some type of calamity occurring in Little Falls and what could be done to meet an emergency situation."

Was Prepared for Emergency

"Whether our medical staff was better prepared than most to meet such an emergency because of this is open to question, but certainly our hospital was. The orderly care and the lack of any confusion in those terrible hours spoke eloquently of our hospital organization. In fact, were another to happen again, there are only a few minor things that would be done differently.

"If our group was better prepared for this emergency, and we feel strongly that we were, for having foreseen some of our problems, there is no reason why any hospital group cannot also better itself by simply discussing how it could react to an unusual medical situation. This need not necessarily be a train wreck. Any community might have an industrial explosion, a fire, flood, building collapse, a meteorologic phenomena, or, and this is not beyond the realm of possibility, an air raid. If a staff could know just a little of the problems that would result

if any of these things should happen, it could not but be better fitted to meet them.

"Does the average hospital staff know where to get large amounts of tetanus and gas gangrene antitoxin quickly for emergency use? Suppose a hospital used up its supplies of sterile goods, splints, plaster, x-ray films. How could they be obtained quickly? Are sufficient blood donors of known type available in the community ready for emergency use? What would it do if there were more patients than beds? Suppose the electric power were destroyed, what light would be arranged quickly?

"Indeed, what if the hospital itself were demolished? Where and how would medical and surgical care then be carried on? These are questions we can well afford to ask ourselves so that we will be better prepared. There are no universal answers to these questions. Each locality has its own medical setup, its own hospital, and its own community temperament. It has been said, 'It can't happen here,' but it can—in every single city, and sooner or later something will happen. It behooves the medical profession to be prepared."

Splendid Cooperation Shown

"It is impossible for any one man, whether he is a railroad surgeon, an industrial surgeon, or health officer, to handle any catastrophe. The medical profession as a group must throw their whole energies unselfishly into the problem. It is very significant that the efficiency with which the Lake Shore Limited wreck was handled by the medical profession here in Little Falls is almost unparalleled and is a great tribute to their unity, spirit of cooperation, and ability. The hospital and its staff, from superintendent to helper, must be given the highest praise for their part in this disaster.

"Without exception, every visitor in those days marveled at the efficiency with which the hospital functioned. The patients, besides having excellent care, were made to feel at home and that they were among friends. Many of the victims made lasting friendships while patients in the hospital. Indeed, a few have returned to Little Falls for private medical and surgical care. It has been said of the people of Little Falls that in no other city could there have been a more generous and sympathetic response."

Newsy Notes

Dr. Floyd S. Winslow, former president of the Medical Society of the State of New York, has been named president of Iola Sanatorium board of managers.

Subscribers to the three-cent-a-day hospital plan of the Associated Hospital Service of New York who enter the armed services will be kept on the enrollment list without charge and will be given full hospital benefits after discharge from the armed forces if payment is resumed within sixty days of discharge, Dr. S. S. Goldwater, president and chairman of the board of the service, announces.

Fifty New York hospitals have offered the free use of their clinics and other facilities to local draft boards for physical examinations of men registering under the Selective Service Act, it is announced by Leighton M. Arrowsmith, president of the Greater New York Hospital Association.

Special hospitals for persons with alcoholism instead of "revolving-door jails" were recommended on October 15 at a conference in New York City on alcoholism attended by physicians, psychiatrists, physiologists, churchmen, prohibitionists, representatives of large whisky distillers, and persons interested in the problem of drunkenness from other points of view.

Dr. C. C. Burlingame, psychiatrist, of Hartford, Connecticut, said there was general agreement in his group that special-type hospitals where there would be psychiatric, sociologic, and medical treatment should be established.

A \$100,000 suit against the Associated Hospital Service of New York, brought by a man who claims that the incorporators of the service filched the idea from him, was disclosed in papers filed before Supreme Court Justice James T. Hallman in Brooklyn on October 22. The hospital organization entered a general demer.

The Triboro Hospital for the tubercular in Jamaica will begin receiving patients Jan. 1, with the maximum of 557 expected to be reached by July 1, according to the Department of Hospitals.

More than 10,000 articles of linen, at a cost of more than \$2,000 were donated to Flushing Hospital last summer by the Woman's Auxiliary as its summer requisition, it was announced at the fall meeting of the governing board.

The Queens Vulture, 40 and 8, will give an infant's respirator to each hospital in Queens, it announces. A second baby incubator has been given to St. John's Hospital by the Kiwanis Club of Astoria. Watertown's two hospitals have both been equipped with iron lungs, one the gift of the Watertown Lodge of Elks, and the other given by the Watertown Rotary Club, Lions Club, American Legion and the Jefferson County Chapter of the National Infantile Paralysis Foundation.

Improvements

Enlargement of the Brooks Memorial Hospital at Dunkirk is planned. As tentatively outlined the new section would contain fifty beds and all operating rooms, emergency, and specialized services. A dining room and kitchen also would be in the new building, probably in the basement, according to often-followed practice. Administration offices also are slated for the new building which will cost around \$150,000.

The creation of a children's ward and the construction of a new wing for the General Hospital of Saranac Lake are among the major recommendations submitted by Maurice M. Feustmann, president of the Board of Directors, in the annual report of the hospital.

The American Legion Post at Potsdam is raising funds to build an addition to the Potsdam Hospital, which is badly overcrowded. The Post staged three boxing bouts in August as part of its campaign.

A new nurses' home at the Oneida County Hospital is under consideration.

St. Joseph's Maternity Hospital at Troy has opened a new prenatal and well-baby clinic, established with the cooperation of the Troy office of the Catholic Charities. The clinic will be operated in cooperation with the city and county welfare departments. The quarters include examination and dressing rooms, a waiting room, and interview rooms for the physicians and social workers.

St. John's Hospital in Long Island City is undergoing a refurbishing, which extends from ground floor to top and even reaches out to the surrounding grounds. Already more than \$25,000 has been spent to give the institution new x-ray machines, new ambulances, and new kitchen equipment. Two children's wards have been remodeled, an isolation porch has been added and gradually the whole interior of the building is being renovated and redecorated.

The White Plains Hospital and St. Agnes Hospital have received new ambulances, gifts from the people of the city and vicinity, made through the four service clubs of White Plains—Lions, Rotary, Kiwanis, and Exchange. Other organizations aided, but the service clubs, through their Inter-Service Club Committee, sponsored the project and saw it through to success.

A widened field of x-ray treatment was opened up recently at Ideal Hospital of Endicott, when the giant x-ray machine donated by Thomas J. Watson was put into service. In a room lined with two and one-half tons of sheet lead, a patient may now receive deep therapy treatment not available in any other hospital in this section. The 200,000-volt machine, in fact, is the first installation of this type of device made anywhere by the General Electric X-Ray Corp.

So powerful are the machine's rays that no operator can stand in the room while the treatment is given. The tube is controlled by an operator standing outside and looking through a special lead-treated window.

The tube itself is about two feet long and is immersed in 45 gallons of refined oil within the 600-pound condenser box.

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Woman's Auxiliary

To the Medical Society of New York State

THE fall meeting of the Executive Board of the Woman's Auxiliary to the Medical Society of the State of New York was held October 16 at Garden City, Long Island and was a most successful and enjoyable event. The visitors were guests in the homes of the Nassau County Auxiliary members. The evening preceding the meeting a dinner was given for them at the Garden City Hotel by the president of the State Auxiliary, Mrs. Luther H. Kice. At the board meeting, held in the auditorium of the Nassau County Hospital in Mineola, interesting reports were read by the officers, chairmen of committees, and county presidents. After a luncheon at the Cherry Valley Country Club the afternoon session convened, and Dr. Louis H. Bauer, a member of the Preparedness Committee of the State Medical Society, gave a most enlightening talk on auxiliary preparedness.

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Mrs. E. A. Griffin writes: "Since my appointment as State Chairman of circulation for the National *Bulletin* I have written to each county president and asked her to appoint a chairman of circulation for her county. These are: Queens, Mrs. Harold Foster—Corona, Orange, Mrs. W. A. Schmitz—Middletown, Oswego, Mrs. John J. Brennan—Oswego, Herkimer, Mrs. Jere McEvilly—Little Falls, Albany, Mrs. Frank E. Coughlin—Albany, Rensselaer, Mrs. John A. Enxen—Troy, Kings, Mrs. Joseph Rizzo—Brooklyn, Erie, Mrs. Fred St. John Hoffman—Buffalo, Broome, Mrs. John Moss—Binghamton, Schenectady, Mrs. H. W. Galster—Scotia."

County News

County Organization

It is with pride that we lead our county reports with the organization of a grand group of physicians' wives—those of Montgomery County. They have started with much enthusiasm and will make a great success of their venture. At an organization meeting in October Mrs. Luther H. Kice, state president, explained the aims and purposes of an auxiliary to a county medical society. Mrs. J. Curran was selected as the chairman of a committee to draw up a constitution and Mrs. E. A. Bogden as chairman of a committee to nominate officers. Those attending from organized counties were: Mrs. Kice, of Garden City, Mrs. A. W. Greene, Mrs. W. F. MacDonald, Mrs. A. H. Congdon, and Mrs. L. P. Tischer, of Schenectady, Mrs. R. Johnson and Mrs. G. Sincerbeaux, of Auburn.

At their first regular meeting held November 1, the following officers were elected: president, Mrs. S. L. Homrighouse, president-elect, Mrs. P. J. Fitzgibbons, vice-president, Mrs. W. H. Seward, secretary, Mrs. E. B. Kelly, treasurer, Mrs. A. J. Townley, of Fonda. The executive board has for legislation, Mrs. R. Korn, membership, Mrs. W. H. Seward, public relations, Mrs. J. P. Curran, entertainment, Mrs. M. F. Geruso, notification, Mrs. R. Wyrntwal, Johnsville. The constitution and bylaws were adopted at this meeting. An advisory committee consists of Dr. S. L. Homrighouse, Dr. P. J. Fitzgibbons, Dr. E. H. Ormsby, Dr. W. S. Seward, Dr. L. M. McGugan, of Amsterdam, and Dr. W. R. Rathbun, of Canajoharie. A charter membership

book, presented by Dr. and Mrs. S. L. Homrighouse, will be kept open for signatures until the January meeting.

Three cheers for this wonderful beginning and success to Montgomery County Woman's Auxiliary.

Nassau The auxiliary is cooperating with the Nassau County Mental Hygiene Committee for the duration of the mental hygiene course which the committee is sponsoring.

Members of the staff of the Child Study Association of America are giving eight lectures on mental hygiene in family and community relationship. Lecturing on this program are Dr. and Mrs. S. Gruenberg, Dr. P. Blos, Dr. Caroline Zackry, Mrs. Anna Wolf, and Mrs. Aline Auerbach. The benefit to the community by this project is immeasurable. Chairman of this committee is Mrs. N. H. Robin. The third Annual Cancer Institute was held at the Great Neck Woman's Club House on October 29. Mrs. A. C. Martin presided at a luncheon meeting held in conjunction with this project. Dr. E. G. Brown, health commissioner, spoke on "Cancer Reporting in Nassau County", Mrs. Walter T. Loebmann discussed "The Educational Program of the Nassau County Cancer Committee."

In the afternoon Dr. R. Derby, chairman, Nassau County Cancer Committee, presided. The speakers and their topics were: Dr. Clarence C. Little, "Women's Part in the Cancer Control Program", Dr. A. S. Warriner, "Cancer of the Female Pelvis." A movie, *Choose to Live* concluded the session.

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Subscribe to the *Bulletin*. Goal 6,000! We wish to make every effort to increase the circulation of the *Bulletin*. In the last issue of the *JOURNAL* you will find a detailed description of this important publication of the Woman's Auxiliary to the American Medical Association.

Mrs. E. A. Griffin writes: "Since my appointment as State Chairman of circulation for the *National Bulletin* I have written to each county president and asked her to appoint a chairman of circulation for her county. These are Queens, Mrs. Harold Foster—Corona, Orange, Mrs. W. A. Schmitz—Middletown, Oswego, Mrs. John J. Brennan—Oswego, Herkimer, Mrs. Jere McEvilly—Little Falls, Albany, Mrs. Frank E. Coughlin—Albany, Rensselaer, Mrs. John A. Enxien—Troy, Kings, Mrs. Joseph Rizzo—Brooklyn, Erie, Mrs. Fred St. John Hoffman—Buffalo, Broome, Mrs. John Moss—Binghamton, Schenectady, Mrs. H. W. Galster—Scotia."

County News

County Organization

It is with pride that we lead our county reports with the organization of a grand group of physicians' wives—those of Montgomery County. They have started with much enthusiasm and will make a great success of their venture. At an organization meeting in October Mrs. Luther H. Kice, state president, explained the aims and purposes of an auxiliary to a county medical society. Mrs. J. Curran was selected as the chairman of a committee to draw up a constitution and Mrs. E. A. Bogden as chairman of a committee to nominate officers. Those attending from organized counties were Mrs. Kice, of Garden City, Mrs. A. W. Greene, Mrs. W. F. MacDonald, Mrs. A. H. Congdon, and Mrs. L. P. Tischer, of Schenectady, Mrs. R. Johnson and Mrs. G. Sincerbeaux, of Auburn.

At their first regular meeting held November 1, the following officers were elected: president, Mrs. S. L. Homrighouse, president-elect, Mrs. P. J. Fitzgibbons, vice-president, Mrs. W. H. Seward, secretary, Mrs. E. B. Kelly, treasurer, Mrs. A. J. Townley, of Ponda. The executive board has for legislation, Mrs. R. Kornis, membership, Mrs. W. H. Seward, public relations, Mrs. J. P. Curran, entertainment, Mrs. M. F. Geruso, notification, Mrs. R. Wyrntwal, Johnsville. The constitution and bylaws were adopted at this meeting. An advisory committee consists of Dr. S. L. Homrighouse, Dr. P. J. Fitzgibbons, Dr. E. H. Ormsby, Dr. W. S. Seward, Dr. L. M. McGugan, of Amsterdam, and Dr. W. R. Rathbun, of Canajoharie. A charter membership

book, presented by Dr. and Mrs. S. L. Homrighouse, will be kept open for signatures until the January meeting.

Three cheers for this wonderful beginning and success to Montgomery County Woman's Auxiliary.

Nassau. The auxiliary is cooperating with the Nassau County Mental Hygiene Committee for the duration of the mental hygiene course which the committee is sponsoring.

Members of the staff of the Child Study Association of America are giving eight lectures on mental hygiene in family and community relationship. Lecturing on this program are Dr. and Mrs. S. Gruenberg, Dr. P. Blos, Dr. Caroline Zackry, Mrs. Anna Wolf, and Mrs. Alne Auerbach. The benefit to the community by this project is immeasurable. Chairman of this committee is Mrs. N. H. Robm. The third Annual Cancer Institute was held at the Great Neck Woman's Club House on October 29. Mrs. A. C. Martin presided at a luncheon meeting held in conjunction with this project. Dr. E. G. Brown, health commissioner, spoke on "Cancer Reporting in Nassau County". Mrs. Walter T. Loebmann discussed "The Educational Program of the Nassau County Cancer Committee."

In the afternoon Dr. R. Derby, chairman, Nassau County Cancer Committee, presided. The speakers and their topics were Dr. Clarence C. Little, "Women's Part in the Cancer Control Program", Dr. A. S. Warriner, "Cancer of the Female Pelvis." A movie, *Choose to Live* concluded the session.

Oneida The election of officers and the honor of having the state president, Mrs Kice, at the first meeting of the new season is reported by Mrs Gordon B Taylor, of Utica.

The president is Mrs W Wright, vice-presidents, Mrs J O Farrell and Mrs A Sloan, recording secretary, Mrs B F Golly, Rome, corresponding secretary, Mrs R G Kibbey, treasurer, Mrs Paul Girard. New directors are Mrs W W. Millias, Rome, and Mrs H W Jones, Utica. The plans for the year were discussed and outlined to include war relief and community welfare projects.

Orange Regular fall meetings were held by Orange County. At the first executive board meeting the president, Mrs L T Seward, of Goshen, entertained at her home. Those present decided to hold an open meeting and secure a speaker from the National Red Cross Headquarters. In sending a report of this regular meeting, held at Middletown, Mrs W H Snyder says "Dr J L Mulherin, of Washington, D C, from the American Red Cross, presented many interesting facts. He answered many

questions and explained that the destination of materials and funds for the foreign war relief were being sent to those countries in greatest need." The large attendance included persons from Newburgh, Goshen, Montgomery, and Middletown. This meeting fostered increased interest in the work of the American Red Cross.

Rensselaer Health and its relation to national preparedness was the program topic for the regular monthly meeting at which Mrs S H. Curtis presided. Mrs Joseph A. Lasko, who has been appointed state chairman of *Hygeia*, gave a report on the recent state meeting of county presidents at Garden City, L I. Mrs John A. Enzien was appointed county chairman for the *Bulletin*, the official national women's medical organization magazine. Mrs Victor C. Jacobsen read a report of the recent defense meeting held by the Troy Council of Social Agencies. Mrs G H Klinck read an article on the national work of the American Red Cross and the local unit, written by Mrs James H. Donnelly. The auxiliary then went on record as being in favor of the Troy women's part in the national defense.

A.M.A. RADIO BROADCASTS RESUMED

The winter and spring season of network radio broadcasting was resumed by the American Medical Association in cooperation with the National Broadcasting Company over the Blue Network of stations on November 13, at 10 30 to 11 00 P.M. eastern standard time (9 30-10 00 central, 8 30-9 00 mountain and 7 30-8 00 Pacific). The J.A.M.A. for September 21 announced

"The program will be in dramatized form constituting the sixth successive season of dramatized broadcasting by the Association on a nation-wide network. The title of the program will be *Doctors at Work*. The theme of the program will be the interpretation to the listener of services available in the treatment of disease and the preservation and promotion of health through the various branches of modern medicine. Thirty programs are planned dealing with different phases of medical practice, beginning with medical education, internship, residency, and general practice and embracing all the major specialties in medicine and in medical phases of public health work.

"The scripts will be written by William J. Murphy, director of continuity for the central division of the National Broadcasting Company, and will be under the supervision of the Bureau of Health Education with the cooperation of Miss Judith Waller, educational director, central division, National Broadcasting Company.

"The evening hour assigned for these broadcasts is the most favorable hour that has ever been made available for sustaining health education broadcasts. Poster announcements of the programs have been prepared by the Bureau of Health Education. These will be sent in any reasonable quantity which can be effectively used on request from state or local medical societies and units of the woman's auxiliary or to health departments, schools, or other educational institutions.

"Titles of programs to come will be published three weeks in advance in the J.A.M.A. and monthly in advance in *Hygeia*.

"Comments on the program from physicians and other listeners are invited."

The Department of Obstetrics and Gynecology of the University of Chicago and the Chicago Lying-in Hospital through the cooperation of the Children's Bureau, United States Department of Labor and the Illinois State Department of Public Health offers five postgraduate courses of four weeks each between January 6 and June 21. The beginning dates of each are: January 6, February 10, March 17, April 21, and May 26. All the members of the department and all services and units of the institution participate in the instruction. Only a limited number of postgraduate students are accepted for each period. A deposit of \$25 is required, of which \$10 is returned on completion of the course. All communications should be addressed to Postgraduate Course, 5848 Drexel Avenue, Chicago.

The Medical Society of the State of New York Committee on Public Health and Education has arranged a course on diseases of the chest for the Rockland County Medical Society. The lectures are held at the Summit Park Sanatorium, Pomona, at 3 30 P.M.

Three were given in November, the December lectures are as follows: December 6—Suppurative Diseases of the Lung; Suppurative Pneumonia, Abscess, Bronchiectasis—Herbert C. Maier, December 13—Benign and Malignant Neoplasms: Diagnosis, Clinical Effects and Treatment—Frank B. Berry, December 20—Fibrosis and Emphysema: Causes, Differentiation, Management—Oswald R. Jones, December 27—Bronchoscopy in Diseases of the Chest—John D. Kernan. All of the speakers are from New York City.

Books

Books for review should be sent to the Book Review Department at 1313 Bedford Avenue Brooklyn N Y. Acknowledgment of receipt will be made in these columns and deemed sufficient notification. Selection for review will be based on merit and the interest to our readers.

REVIEWED

Vitamin E A Symposium held under the auspices of The Food Group (Nutrition Panel) of the Society of Chemical Industry on Saturday, April 22, 1939, at the School of Hygiene and Tropical Medicine, Keppel Street, London, W C 1, England. Octavo of 88 pages. New York, Chemical Publishing Co., 1940. Cloth, \$2.00.

This eighty-five-page monograph, a symposium on one vitamin by collaboration of workers in biochemistry, pharmacology, physiology, and clinical medicine, should serve as an example to other scientific groups. The answer to many of the vitamin questions, and for that matter most medical science questions, will be found only by similar methods of cooperative approach.

This work covers the present status of vitamin E in the following three major considerations: (1) the chemical structure and properties of Tocopherol (vitamin E), (2) the physiologic action of vitamin E and the consequences of deficiency, (3) clinical and veterinary application.

The members partaking in this symposium of the Society of Chemical Industry in England on April 22, 1939, had international representation—England, Canada, United States, Holland, and Denmark.

Pregnancies characterized by vitamin E deficiency tend to spontaneous abortion. Of particular interest is the relation of vitamin E deficiency to hemorrhagic placental detachment and the accompanying toxemia. The above considerations and the results of wheat-germ oil therapy are well covered.

PAUL C ESCHWEILER

Caesarean Section Lower Segment Operation By C. McIntosh Marshall, F.R.C.S. Octavo of 230 pages, illustrated. Baltimore: Williams & Wilkins Co., 1939. Cloth, \$6.50.

This work begins with a short history of the lower segment abdominal cesarean section and describes briefly the various types of technique that have been suggested. Of these the author prefers the operation in which the uterus is incised, transversely, low down in the lower segment or cervix. In order that the site of incision may be so placed, the bladder naturally is dissected off from the uterus and displaced downward to a considerable extent. This low transverse incision is designed for the purpose of offering better protection against the transmission of infection from the uterus to the peritoneal cavity after the wound is closed than is afforded by the vertical or higher transverse incisions of the uterus. In support of this statement the author presents a brief summary of his results in 246 operations. Seventy of these were done because of disproportion after the patient had had considerable labor and in many instances, after the membranes had been ruptured a number of hours. Twenty-four of them were performed

after a bougie or bag had been introduced or after other vaginal manipulations had been attempted. In spite of the inclusion of these unfavorable cases, all of the patients survived the operation.

The anesthesia used in the recorded series consisted of ether in 60 cases, spinal in 112, and local in 74. Although he seems to favor the use of spinal anesthesia and devotes considerable of his text to a discussion of its advantages and disadvantages, he states: "My own experience leaves me in no doubt that spinal anaesthesia is particularly dangerous in Caesarean section. Any obstetrician who sets out to perform a large series of Caesarean sections under spinal anaesthesia must be prepared to face a possible mortality of not less than 1 per cent due to this cause alone."

The text is clear and the illustrations are well done and comprehensive. This monograph is recommended to all who are interested in the subject of cesarean section.

ALFRED C BECK

The Detection and Identification of War Gases Notes for the Use of Gas Identification Officers. First edition. Octavo of 53 pages. New York, Chemical Publishing Co., 1940. Cloth, \$1.50.

This volume appears to be one of the best of several publications on air-raid precautions made available in America by the British Government. It is very understandable to one not an expert in chemistry, and, where brevity is recognized, appropriate reference is made to collateral volumes.

Chapters I and II are devoted to the classification of chemical warfare agents, their physical, chemical, and physiologic properties. To the Gas Identification Officer who is an expert in chemical warfare agents, these two chapters will be a handy guide, and to those who have not had the advantage of chemical warfare service schools will have valuable information.

A large part of the volume is devoted to the methods of detection of gases and the duties and responsibilities of personnel assigned to this work. These have become somewhat standardized inasmuch as known chemical compounds are the objectives of their search.

CARL W LUPO

The Diagnosis and Treatment of Cardiovascular Disease Edited by William D. Stroud, M.D. Volumes I & II. Quarto of 1,825 pages, illustrated. Philadelphia, F. A. Davis Co., 1940. Cloth, \$18.

In his preface the editor rightly states that "no complete volume including a detailed discussion of the whole subject of cardiovascular disease has appeared." This reviewer would like to add that this was true until the present one by Stroud and his collaborators. Here indeed we have an authoritative work covering both the diseases of the heart and of the vascular system as a whole. The list of contributors

reads like a "Who's Who" in cardiology and the chapters contain the material that the reader expects to find there. Besides the standard presentations of the diseases of the heart and the peripheral vessels there are sections on heart sounds by Wolferth, the form of the electrocardiogram by Wilson, roentgenology by Margolis, thromboangitis obliterans by Buerger, arteriosclerosis obliterans by Wright, and so on. This work provides a fund of information for the practitioner and should be a valuable reference book for the teacher. The editor and the authors are to be congratulated.

EDWIN P. MAYNARD, JR.

Medicolegal and Industrial Toxicology, Criminal Investigation, Occupational Diseases By Henry J. Eilmann, Ph.D. Duodecimo of 324 pages. Philadelphia, Blakiston Co., 1940. Cloth, \$3.00.

This book is divided into five parts: (1) Poisons and Drugs, (2) Criminal Investigations, (3) Medicolegal Examinations of Miscellaneous Nature, (4) Industrial Poisoning, and (5) Occupational Disease.

The author has undertaken to incorporate "in a single volume those subjects that may be encountered frequently by the coroner, industrial physician, lawyer, insurance adjuster, toxicologist, laboratory expert, and others."

The chapter on "Poisons and Drugs" comprises more than half the book and has much of interest. There is a concise description of the symptoms of poisoning, detection, toxicology, and post-mortem findings.

In the chapter on "Criminal Investigations" the author discusses blood stains, seminal stains, detection of hairs, and medicolegal examinations of a miscellaneous nature, including blood grouping and the effects of various gases on the tissues. Deaths by strangulation, choking, and submersion are also discussed.

The chapter on "Industrial Poisoning" embraces 18 pages and the chapter on "Occupational Diseases," 23 pages. Both of these subjects are treated in the concise manner in which the book is written. It hardly does justice to such important subjects.

IRVING GRAY

Medical Climatology: Climatic and Weather Influences in Health and Disease By Clarence A. Mills, M.D. Octavo of 296 pages, illustrated. Springfield, Charles C. Thomas, 1939. Cloth, \$4.50.

The effect of climate and weather upon health and disease is a matter of varying opinions among medical men. In this book, Dr. Mills discusses these subjects in their relation to metabolism, body resistance, infectious diseases, the circulatory system, and other subjects of medical interest.

This volume is of practical value to physicians who wish to clarify their thinking on these debatable subjects.

A. E. SHIPLEY

Manual of Fractures, Dislocations, and Epiphyseal Separations By Harry C. W. S. de Brun, M.D. Octavo of 457 pages, illustrated. Chicago: Year Book Publishers, 1939. Cloth, \$3.00.

This small book is easy to read, and covers the subject matter rather well. The author presents the material in a standardized but concise manner, and discusses recent trends in fracture therapy.

An excellent feature is the addition of several chapters devoted to plaster-of-paris technic, the use of physical therapy, interpretation of roentgenograms, disability ratings in fractures, and how to determine them.

This book will be valuable as a quick guide.

C. C. VITALE

Physical Therapy for Nurses By Richard Kovács, M.D. Second edition. Octavo of 335 pages, illustrated. Philadelphia, Lea & Febiger, 1940. Cloth, \$3.25.

This is a good book for the purpose for which it is intended. It makes a nice, handy, small textbook for anyone instructing nurses or others in physical therapy. After each part it has suggested questions, some of these are rather tough for the poor nurse or for the enlightened instructor to answer.

To nurses it should be a handy little compendium for personal reading and use after they get in the broader field on their own. It is not a detailed volume, it is small, brief, and useful.

We thoroughly recommend it—even to physicians.

JOHN J. HAUFF

Clinical Roentgenology of the Alimentary Tract By Jacob Buckstein, M.D. Quarto of 652 pages, illustrated. Philadelphia, W. B. Saunders Co., 1940. Cloth, \$10.

The author has quite thoroughly covered the field of roentgenology as applied to the gastrointestinal tract. For reasons best known to himself he has failed to include mucosal studies of the stomach in the differential diagnosis. The text and explanatory notes are clear and concise. The numerous case reports emphasize the application of x-ray in clinical diagnosis. The illustrations are particularly excellent. One cannot fail to be impressed by the fact that in this book the author has successfully and well concentrated his many years of experience in this field. To anyone interested in the diagnosis of alimentary tract lesions by use of the x-ray, this book will fill a definite need.

The reviewer should like particularly to agree with the author's statement that fluoroscopy and the use of films do not replace but rather augment each other.

B. M. BERNSTEIN

Cyclopropane Anesthesia By Benjamin H. Robbins, M.D. Octavo of 175 pages, illustrated. Baltimore, Williams & Wilkins Co., 1940. Cloth, \$3.00.

This is an excellent monograph for the specialist and advanced student of anesthesiology. It is a neat, orderly, and comprehensive compilation of the great majority of experimental and chemical contributions to the literature on cyclopropane. The author is a noted pharmacologist, especially interested in anesthesia, who has provided excellent and fundamental studies of cyclopropane pharmacodynamics and anesthesia. The reviewer is flattered by the fact that his report as chairman of the Com-

muttee on Fires and Explosions of the American Society of Anesthetists forms the major basis for the monograph's last chapter on the explosive hazards with cyclopropane. This chapter, as well as many others, will soon need revision and addition to keep abreast of the very rapidly growing field of cyclopropane anesthesiology.

BARNETT A GREENE

Arthritis and Allied Conditions By Bernard I Comroe, M D. Octavo of 752 pages, illustrated. Philadelphia, Lea & Febiger, 1940. Cloth, \$8.50.

It is the purpose of the writer to present to the physician the modern facts in the diagnosis and treatment of arthritides and allied conditions. The book is too full of useful facts about bones and joints to permit a satisfactory review in the limited space allotted for that purpose. At the close of each problem discussed is a summary bringing out the basic facts that the reader may learn almost at a glance. Considerable space is given to laboratory findings and the technic, and their worth is evaluated.

This work appeals to the reviewer greatly and he considers it of great value to practitioners at large.

JA C RUSEMORE

The Compleat Pediatrician For the Use of Medical Students, Internes, General Practitioners, and Pediatricists By Wilburt C Davison, M D. Third edition. Octavo of 256 pages. Durham, Duke University Press, 1940. Cloth, \$3.75.

The difference between the form of the first and second edition was great, between second and third, nothing at all.

Evidently Dr Davison, observing the many changes, both absolutely new and minor, which had taken place in pediatric practice in two years, considered a new edition necessary in order to include them. The fact of change is well illustrated by Sections 127 and 243. On the other hand the author is thoroughly content with what he had previously written where practice was static, and many sections are reprinted verbatim.

Again the reviewer recommends this edition as very valuable.

WALTER D LUDLUM

Surgical Diagnosis By Stephen Power, M S. Octavo of 228 pages, illustrated. Baltimore, Williams & Wilkins Co., 1939. Cloth, \$4.50.

This is a handy, small book, well suited to give a practical outline of diagnosis of the more common surgical conditions. Its brevity is one of its chief features, which makes it more of a medical students' handbook than a surgeons' work of reference. However, its original remarks and illustrations and the clear-cut descriptions of the various surgical conditions might interest and inform any physician.

The typography, though much smaller than that usually found in medical books, is dark, clear, and very legible. It allows each page to carry many words and seems to make the reading more rapid. In the index the type is even smaller and considerably lighter, a feature which would bother the student less than his presbyopic teacher.

WM H FIELD

An Introduction to Medical Genetics By J A Fraser Roberts, M A. Octavo of 266 pages, illustrated. New York, Oxford University Press, 1940. Cloth, \$4.50.

Roberts has succeeded in giving the medical reader a readable treatise on medical as contrasted to general genetics. Basic principles are fully restated for the benefit of the many who have had little contact with the subject since elementary college courses, and they are applied in later chapters to most of the conditions encountered in practice. Omission of sections on the history of this science and animal genetics conserves space but may diminish the amount of critical judgment the medical reader will bring to his study of the book. All the material is adequately presented from the point of view of orthodox genetics.

MILTON PLOTZ

Tumors of the Hands and Feet. Edited by George T Pack, M D. Quarto of 138 pages, illustrated. St Louis, C. V Mosby Co., 1939. Cloth, \$3.00.

There is a splendid introductory chapter by Dr George Pack and thorough if not exhaustive, chapters on carcinoma of the hands and feet, subungual melanoma, angiomatous tumors of the hands and feet, tumors of the synovia, tendons, and joint capsules of the hands and feet, and tumors primary in the bones of the hands and feet.

This is a splendid monograph, excellently written, well edited, and interspersed with numerous photographs and x-ray plates. There are also many instructive case reports. The authors are to be commended for this really fine work.

JOHN J GAINAY

Synopsis of Obstetrics. By Jennings C Litzenberg, M D. Duodecimo of 394 pages, illustrated. St Louis, C. V Mosby Co., 1940. Cloth, \$4.50.

This volume reflects the clinical judgment and experience of a man long associated with the practice of sound obstetrics.

Axiomatic in form, the volume is a remarkable condensation of conservative obstetric principles. The normal course of labor is dealt with adequately. The puerperium is discussed in detail. Sufficient emphasis is placed on the pathology of normal and abnormal obstetrics. The complications of labor are given a fairly thorough review.

This is a text that presents a wholesome and concise review of obstetrics for medical students and general practitioners.

JAMES H BUTLER

Nursing Mental Diseases By Harriet Bailey, R.N. Fourth edition. Quarto of 264 pages. New York, Macmillan Co., 1939. Cloth, \$2.50.

This work is the fourth edition of a book that has occupied a position of dignity and respect in the nursing profession. It is written by one who has passed through all stages of mental nursing and who has held positions of respect and honor in the nursing profession. Her experience has been a large and extensive one. She has written in a sympathetic and a clear

style and has covered the entire field of nursing mental patients

Physicians would do well if they were to read this book, for the contents contain much that would prove of value to them in managing mentally sick patients

The book is highly recommended because of its thoroughness and its authenticity

IRVING J SANDS

Manual of Dermatology By Carroll S Wright, M D Octavo of 376 pages, illustrated Philadelphia, Blakiston Co., 1940 Cloth, \$4 00

The author presents a small book that is truly a manual for the general practitioner and the student of dermatology. It contains about 360 pages which are quite freely illustrated with excellent photographs

The usual fundamentals of dermatology consisting of anatomy and physiology, definition of lesions, basic principles of treatment, etc., are succinctly presented.

The commoner skin diseases are outlined with sufficient description to be of real value yet briefly enough for the busy man. The rarer skin diseases are presented in a short paragraph. The suggested treatments are always those proved to be of value, with occasional references to newer forms that have not been able to prove their worth at this time. In some instances tables of differential diagnosis are included.

This book is well written and fundamentally sound in its presentation, but it is not an ancient manuscript, as it has been brought up to date with modern progress. We can recommend it

E ALMORE GAUVAIN

Bacteriology By William W Ford, M D 16 mo of 207 pages, illustrated New York, Paul B Hoeber, Inc., 1939 Cloth, \$2 50 (Clio Medica Series, Volume XXII)

This small volume presents a concise résumé of the history of bacteriology. The presentation is based on a chronologic approach and begins with the early microscopists especially Leeuwenhoek. From this point on the author considers the development of his subject through the eighteenth and nineteenth centuries to the present day. The contributions of Henle, Cohn, Pasteur, and Koch are dealt with in detail, and the author concludes with a consideration of the rise of immunology and the advances of bacteriology during the early part of the present century. As Ford points out in his preface, his book owes a great deal to the work of Bulloch, and consequently it suffers from the same defects as its predecessor. That the title is a misnomer goes without saying, for the book is far from being a history of bacteriology. It is only a history of medical bacteriology and should be so entitled. In the second place, a perusal of Ford's book leaves one with the impression that the development of bacteriology took place in some ivory tower. The author might at least have indicated the connections between the progress of bacteriologic knowledge and the social environment in which it took place. Within its limited sphere, however, it is a worth-while addition to the Clio Medica series and is recommended for the doctor's library

GEORGE ROSEN

Supervision in Public Health Nursing By Violet H Hodgson Octavo of 376 pages New York, The Commonwealth Fund, 1939 Cloth, \$2 50

Physicians active in the administrative public health field will be interested in this book, especially those chapters dealing with the duties of the supervising nurse in relation to the public health officer

With respect to the technic of supervising public health nursing in the clinic and in the field, the author properly emphasizes the value of "leading" instead of "driving" the field nurses as a means of securing best results. Education is the greatest factor in modern public health work, and this applies to the training and supervision of the personnel as well

A B SHIPLEY

Convalescent Care Proceedings of the Conference Held Under the Auspices of the Committee on Public Health Relations of The New York Academy of Medicine, November 9 and 10, 1939 Octavo of 261 pages New York, The New York Academy of Medicine, 1940 Boards

Convalescent care in a definite, organized way is recognized as a crying need. In 1939 a conference on this subject was held by The New York Academy of Medicine, and this book records the proceedings of that meeting

After discussing the basic features of the problem, the conference considered the various types of patients needing convalescent care. This was followed by a discussion of the social, financial and administrative aspects

Convalescent care is a challenge to the medical profession. Read this book and find out what students of this problem think about it

A E SHIPLEY

The New International Clinics. Original Contributions, Clinics, and Evaluated Reviews of Current Advances in the Medical Arts Edited by George M Piersol, M D Volume IV, New Series Two Octavo of 339 pages illustrated Philadelphia, J B Lippincott Co 1939 Cloth, \$3 00

The December, 1939, issue contains twenty instructive articles. An important contribution is that by Swindle on pseudoarteriosclerosis, based on animal studies. If this work can be extended to the pathologic processes of human beings, it is of fundamental significance. Reich's excellent review of urinary lithiasis collects, in one paper, all important recent data on the etiology and pathogenesis of renal stones

MILTON PLOTZ

Experimental Poliomyelitis. By Morris Schaeffer, Ph D and Ralph S Muckenfuss, M D Quarto of 158 pages New York, National Foundation for Infantile Paralysis, 1940 Cloth

This interesting volume is particularly concerned with the study of the application of the neutralization test to poliomyelitis. The first part of the book contains a discourse on the subject with a review of the literature and the interpretation of previous studies. In the second portion the authors present the results of their

own experimental studies regarding some of the physical factors involved in the neutralization test. For their complete conclusions, which seem of significance and importance in the evaluation of the work on experimental poliomyelitis, the book must be read. They are convinced that quantitation of neutralizing antibody in poliomyelitis is not a practical procedure and that the present status of the neutralization test permits only qualitative examination of serums. Although the authors consider the test a specific antigen-antibody reaction and find some relation between the presence of neutralizing substances in the blood and the occurrence of exposure to the virus, they do not consider that its presence necessarily constitutes resistance to infection. Irregularities and inconsistencies in results render this test unsuitable for quantitative studies such as those on variations in strains of virus, the relation of serums, and other problems, hence with this test as used, "the significance of the antiviral substance in poliomyelitis cannot readily become clarified."

JOSEPH C. REGAN

Ways to Community Health Education. By Ira V. Hiseock. Octavo of 306 pages, illustrated. New York, The Commonwealth Fund, 1939. Cloth, \$3.00.

In any community health program the present emphasis on personal hygiene in disease prevention calls for measures that require the participation of the medical profession. Various kinds of immunizations, tuberculin and x-ray testings, procedures to control syphilis and gonorrhea are cited as examples.

Ways and means to direct the attention of the public to the need for health advice and guidance, as well as medical care when necessary, are essential. This book by Dr. Hiseock and his colleagues describes the various methods of community health education in clear-cut language supplemented by profuse illustrations.

Physicians who read this volume will be able to perform more effectively their part in the health care of the community.

A. E. SHIPLEY

Tuberculosis and Genius. By Lewis J. Moorman, M.D. Octavo of 272 pages, illustrated. Chicago, University of Chicago Press, 1940. Cloth, \$2.50.

Now while persecution and concentration camps are canceling human inheritance and are stripping away from men and women all their natural environment, it is well to consider the treasure of life. What is it? Is it possible that it could prove to be not unlike the treasure of those who struggle with disaster and of those who meet death? The vision that comes to those who suffer and those whom death approaches Dr. Moorman illustrates in the brilliant introduction to his book *Tuberculosis and Genius*. Dr. Arthur C. Jacobson in his *Genius Some Revaluations* wrote in comment of another book, "We should be able intelligently to know when the Dark Angel intrigues us and when we are addressed by man in his natural state." Is it at all sure that any such distinction as the one indicated by Dr. Jacobson exists, for in the eternal cycle as soon as we are born do we not begin

to die? The approach of death sometimes brings a curious translucence with it, not of the flesh alone, and its immediacy can result in a time of abundant vision. This is one of the facts of the chemistry of death. What the explanation is still lies with the poets.

Of this translucence by means of which men are able to see through the opaque stuff of life into what Wordsworth calls "the life of things," Dr. Moorman is always aware. It matters little whether we call this flight of vision "soul" or "mind." Of such is spiritual culture, and to be found in the lives and expressed through the work of many of the figures Dr. Moorman chooses for discussion in the relationship between genius and tuberculosis: Francis Thompson, Shelley, Friedrich Schiller, Voltaire, Stevenson, Marie Bashkirtseff, Molière, St. Francis, Keats, Katherine Mansfield.

The climax of Dr. Moorman's interpretation is in the essay on Francis Thompson whose high individual courage and spiritual dignity are at their core English. This is a beautiful essay, authoritative in its medical interpretations, expert in its handling of biographical material. The synthesis of *Tuberculosis and Genius* as a whole is expert. These studies are "briefs" with an object in view and so skillfully managed that the reader is saved much time. Yet not infrequently in the reading of an essay, notably the essay on Shelley, comes this query: Is Dr. Moorman's primary object synthetic biography or is it the relation of certain life facts to the tuberculous condition?

JEANNETTE MARKS

The Public Health Nurse and Her Patient. By Ruth Gilbert. Octavo of 396 pages. New York, The Commonwealth Fund, 1940. Cloth, \$2.25.

Expansion in the field of public health, both official and voluntary, has witnessed a concomitant expansion in public health nursing services. Health education is recognized by public health agencies as a field of increasing importance, and in this field the public health nurse is the most important factor because she is the public health worker who has the widest personal contact with the public.

A broad understanding, therefore, of personal and familial relationships is a most important part of the nurse's armament in her fight against the forces of ignorance and indifference. The reading of this book would fill a gap in the training of many public health nurses and is recommended to all workers in that special field of endeavor.

F. L. MOORE

The Emperor's Itch. The Legend Concerning Napoleon's Affliction with Scabies. By Reuben Friedman, M.D. Octavo of 82 pages, illustrated. New York, Froben Press, 1940. Cloth, \$1.50.

This book depicts one of the minor illnesses acquired by Napoleon during the siege of Toulon in 1793. It was an irritating skin eruption, necessitating continuous scratching of the surface of the skin. Napoleon, as proved by autopsy, died of a cancer of the stomach superimposed upon a gastric ulcer. In his early years, he was a sufferer from malaria and tuberculosis. The causation of the itch is based on the following legend: Napoleon, while commanding officer of the regi-

ment, observed that one of the cannoners was shot down at the side of the battery Napoleon took the ramrod, which had fallen out of the hands of the dead soldier, and charged the gun several times. In consequence he contracted a skin disease which was not completely cured until he consulted Dr Corvisart, ten years later.

The earlier biographers and historians labeled the disease scabies or itch mite, a prevalent affliction of that time. The author of this book offers an entirely new diagnostic interpretation of Napoleon's itch. He considers it a chronic dermatitis described by Duhring in 1884 under the title of dermatitis herpetiformis. The author has come to the conclusion that the affliction was not scabies because the manner in which it was contracted at Toulon is incorrectly interpreted. The chronicity of the affliction that withstood the antiscabetic treatment of the sulfur baths and the recurrence of the itch point more conclusively toward a diagnosis of dermatitis herpetiformis with neurotic excoriations than to scabies.

WILLIAM RACHLIN

A Manual of the Common Contagious Diseases By Philip M Stimson, M.D. Third edition. Octavo of 465 pages, illustrated Philadelphia, Lea & Febiger, 1940. Cloth, \$4.00.

The third edition brings this invaluable manual up to the minute. The whole text has been rewritten and new helpful illustrations added. Prophylaxis is thoroughly covered, and tables are given for the practical application of convalescent serum, whole blood, placental extract, and the newer drugs to the various contagious diseases in which these measures are indicated. The value of the manual has been decidedly increased by the revision. This book should be in the library of every practicing physician.

K. G. JENNINGS

A Textbook of Physiology By William H. Howell, M.D. Fourteenth edition. Octavo of 1,117 pages, illustrated. Philadelphia, W. B. Saunders Co., 1940. Cloth, \$7.50.

The new fourteenth edition of Howell's *Textbook of Physiology* has been thoroughly revised and brought up to date in most sections. Parts have been rewritten, and new material has been added where recent discoveries have justified such changes. Other sections of the book, however, show less complete revision or, as in the case of coronary circulation, no revision whatever. The book remains an adequate and, in most respects, a good textbook for the average student of the subject, but it does not meet the standards set by certain other textbooks in the field.

J. RAYMOND JOHNSON

Modern Dermatology and Syphilology By S. William Becker, M.D., and Maximilian E. Obermayer, M.D. Quarto of 871 pages, illustrated. Philadelphia, J. B. Lippincott Co., 1940. Cloth, \$12.

Three quarters of this volume is given to dermatology and one quarter to syphilology. We agree with the statement in the preface that "the necessity of dermatologic knowledge of syphilitic dermatoses and cutaneous complications of syphilotherapy justify a combined dermatology

and syphilology." We would go further and state that the management of syphilis should be in the hands of the dermatologist who has had a good basic training in internal medicine and who also has an active appointment in a department of internal medicine.

The illustrations are excellent, instructive, and numerous. Smooth reading follows the presentation of the material in the lecture style which, however, must not be allowed to lead its user into undue brevity of exposition (see *Seborrheic Dermatitis*, page 203). The pharmacologic action of the different types of dermatologic remedies is succinctly expressed in a chapter entitled therapy and formulary. The subject matter, as a whole, justifies the use of the term "modern" in the title of the book, but the references at the end of the chapters should have been either greatly increased in number or omitted altogether.

ARTHUR W. GRACE

An Introduction to Biochemistry By William R. Fearon, M.A. Second edition. Octavo of 475 pages. St. Louis, C. V. Mosby Co., 1940. Cloth \$3.75.

Although this is a second edition, it qualifies as a completely new book and deserves to be reviewed as such. The author modestly states that three-quarters of the entire book required re-writing since the publication of the first edition in 1934. We can say, having read the first edition, that one can find very little of its content in the 1940 publication.

The author covers the entire field of nutrition and metabolism, in relation to clinical medicine, from the biochemical point of view. To mention the important chapters would require a reproduction of the complete table of contents.

Suffice it to say that no similar volume on the subject compares favorably with the value and content of this book.

MORRIS ANT

The Psychological Aspects of Pediatric Practice By Benjamin Spock, M.D., and Mabel Hirschka, M.D. Octavo. New York, New York State Committee on Mental Hygiene, 105 E. 22nd Street, 1939. Paper, \$0.25.

The authors discuss from the psychological point of view various problems connected with the development of the infant. They consider such subjects as feeding, habit-forming, and speech disorders. They attempt to present in a simple form, information for the general practitioner, since it is from him that the parents first expect aid in preventing or correcting these difficulties.

STANLEY S. LAMM

Electrocardiography By Chauncey C. Maher, M.D., and Paul H. Woska, M.D. Third edition. Quarto of 334 pages, illustrated. Baltimore, Williams & Wilkins Company, 1940. Cloth, \$4.00.

The third edition of this book includes one hundred electrocardiograms, including the new fourth lead, all fully interpreted. There are numerous helpful diagrams illustrating the probable origin of the various arrhythmias discussed. It is a useful manual for students and practitioners.

ANDREW M. BABEY

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Editorial

Christmas, 1940

"Peace on earth, good will toward men" The words have a strange sound in a stranger world, a world of sorrow, of rancor and hatred, of armed madmen flying wantonly in the pale moonbeams of a ghastly lunacy, a world of nomad nations stalked by the specters of famine and pestilence, disaster and death, a world of violence, viciousness, vituperation, and the vomit of guns Can peace be found here?

Yes, in the hearts of men of good will, in the sweat of the many who yet toil for the good of others can be found even today that peace which passes all understanding And it is such peace and joy at this season which the JOURNAL hopes will be yours for this year and many years to come

THE EDITORS

Tattoo

A correspondent, whose letter will be found on page 1765 of this issue, proposes an identifying tattoo code for those who have a known serum or other particular sensitivity It is his contention that were such a code to be adopted nationally many serum accidents might be avoided, particularly in unconscious victims of wrecks, explosions, and other catastrophes

We think the proposal is worth serious consideration, especially with respect to expediting the care and treatment of casualties in wartime In the nature of things such a system of tattooing would involve the voluntary cooperation of the public and would necessitate a campaign of popular education and acceptance Therefore we deem it advisable that discussion of the possibilities be commenced as soon as possible We therefore urge our readers to consider the proposal carefully It is not without its difficulties

Should it be confined to serum sensitiveness alone? Or should the

code include diabetics and epileptics as well? Certain questions immediately arise touching the matter of public policy. What are the legal aspects of such a procedure? Fingerprinting for purposes of identification is still far from general public acceptance after years of educational work. How popular could such a proposal as this for tattooing be made? Granted the usefulness and the practicability of such a system from the medical point of view, could it be sold to the public successfully? What do you think?

With His Boots On

To John Augustus Hartwell, M D, Surgeon, former president and director of The New York Academy of Medicine, militant foe of cancer, and devoted sportsman, death came from a heart attack on November 30, 1940, as he was about to enter a duck blind of the South Side Sportsmen's Club at Oakdale, Long Island.

Dr Hartwell was born in Sussex, New Jersey, September 27, 1869, the son of Samuel S Hartwell and Clarinda Stiles Hartwell. He received his Bachelor of Philosophy degree at Yale in 1889. While at college he achieved considerable recognition as a member of the crew and of the football team. He received his medical degree from Yale Medical School in 1892, served as intern at Presbyterian Hospital, New York City, and took up postgraduate studies at the Columbia University College of Physicians and Surgeons.

He began practice in New York in 1893. He served as associate professor of surgery and professor of clinical surgery at Cornell University Medical School and as consulting surgeon at Bellevue, Presbyterian, Lincoln, Reconstruction, and Memorial hospitals, New York, the New York Infirmary for Women and Children, Lawrence Hospital at Bronxville, New York, and United Hospital at Port Chester, New York.

During Dr Hartwell's term as president of The New York Academy of Medicine, the Academy as a scientific spokesman for the medical profession was brought into closer relationship with the press and the public than ever before.

A medical information bureau was set up with Dr Iago Galdston as director. A series of radio broadcasts by New York doctors on phases of medicine of interest to the public also was instituted.

When Dr Linsly R. Williams, director of the Academy, died on January 8, 1934, Dr Hartwell was appointed to succeed him as director.

He served as president of The New York Academy of Medicine from 1929 to 1933 and director from 1934 to 1939.

Both as an official of the Academy and as an individual member of the medical profession, Dr Hartwell spoke out frequently and forcefully on medical matters that he felt were important to make public.

In 1939 Dr Hartwell was appointed associate director of the American Society for the Control of Cancer.

He was among the first to recognize the evils of overspecialization and repeatedly warned the profession against it. He also led successfully the campaign against the proposed establishment in 1931 of a clinic to treat cancer by means of sheep-gland therapy which had never been proved to be of value.

During the War he held the rank of major, taught war surgery in New York to surgeons entering the service, and was instrumental in standardizing surgical dressings used in the Army.

Dr Hartwell retained his interest and connections with Yale. He was a member of the Yale Honorary Society, Berzelius, and a member of the Yale Club. A run he made during three years as a member of the Yale varsity football team was commemorated in

one of the undergraduate songs He was a captain of the Yale crew in his last year as an undergraduate

Dr Hartwell was a member of the American Surgical Association, the American Society of Clinical Surgeons, the American Association for Thoracic Medicine, New York Surgical Society, Medical Society of the County of New York, the Medical Society of the State of New York, and a fellow of the Ameri-

can Medical Association He was a member of the board of directors of More Game Birds in America

In his death the medical profession has lost a great voice that was always raised fearlessly and tirelessly against any lowering of professional standards, against fraud, fee-splitting, and any other thing that he considered wrong We salute the passing of a noble spirit
Vale

Plumbism in Infancy

Convulsions occurring in childhood are often difficult to evaluate So many conditions must be considered in arriving at a diagnosis that some of the simpler etiologic factors may be overlooked. This often is the result of a faulty history given by the parents during their anxiety over the dramatic onset of a convulsive seizure in their child.

Bruce,¹ from his experience at the two charity hospitals in Louisville, feels that lead poisoning is responsible for a not inconsiderable number of cases of convulsions in children Lead enters the system of these youngsters by ingestion or inhalation Chewing the paint from such articles as toys, furniture, and window sills is a child's secret delight. Water, contaminated from the white lead used in plumbing is another source, ointments containing lead are often used on the nipples of nursing mothers Among

the very poor, old battery boxes furnish a cheap source of fuel, the lead-containing smoke, especially in overcrowded dwellings, is another source of poisoning

The chief clinical manifestation in the children so afflicted is extreme irritability Definite diagnosis is made possible by roentgen studies which reveal a dense white line in the epiphyses of the long bones Bruce recommends that every child under 5 years of age who has convulsions for which no obvious cause can be found should have these bones x-rayed Children who develop convulsive attacks during an acute infection should be suspected of having a lead encephalopathy Besides sedatives for the immediate condition, removal of the source and slow leadening are preferable to any form of therapy that may rapidly remove the lead from the bones (where it is harmless) into the general circulation and thence to the neural structures

Airplane Ambulances

Modern warfare has impressed upon everyone the importance of morale To us, it seems that this, even more than guns and man power, enables a nation of people to carry on determinedly in the preservation of its traditional way of life No program for preparedness can afford to neglect the most minute detail that will aid in bolstering morale.

A wounded soldier is not the most cheerful of men Yet this present war has shown that the airplane ambulance, with its rapid and comfortable transporta-

tion, has afforded great mental solace not only to the wounded but to the men still fighting, since they feel that every possible aid is being made available for the man in the ranks The stretchers upon which the patients lie are easily reached from the center aisle Pain due to transportation is almost completely eliminated since there is practically no jarring Furthermore, the space provided is more than ample to accommodate a good supply of sedatives, cardiac stimulants, dressings, splints, and even rubber bed pans for

¹ Bruce, J W J M. A. Alabama 10 50 (Aug) 1940

those with spinal injuries. It is also possible to install heating devices so as to lessen the susceptibility of the wounded to the infection of the upper part of the respiratory tract.

These advantages, among others, of the airplane ambulance have been emphasized by Schmidt.¹ Perfection of this

¹ Schmidt, F. *Mil Surgeon* 87: 136 (Aug.) 1940

method of evacuation has as yet not been achieved, since the uncertainty of suitable take-off and landing fields causes a waste of time in loading and unloading. This, however, can be overcome. To a disabled soldier some four hundred miles from home, there is nothing more heartening than to know that he can be home in less than three hours.

Psychoneurogenic Component in Allergy

One might well wonder at this caption. Are we to relegate the prurigos, the eczemas of childhood, and the so-called hay-fever complex to an etiology based upon a psychogenic background? The work of Rogerson and Strauss¹ is worthy of comment. They succeeded in placing a large proportion of patients in the Southampton Asthma Retreat of Guy's Hospital on a status marked by improvement or complete freedom from symptoms *in their own homes* through the application of psychotherapy.

Stokes² has confirmed their observations. He and others find that individuals suffering from these allergic manifestations have a feeling of insecurity, which is complicated by a consciousness of inferiority. This leads to aggressiveness and erratic mental and physical reactions. Their mental faculties, while of exceptional capacity and usually higher than the average intelligence quotient,

are constantly under tension and devoted only to the possibilities of the moment. This ends in boredom rather than rest. A vicious cycle ensues, wherein somatic dysfunction brings on a state of hyperactivity or depression of the psyche, which in turn may adversely affect the physical function.

So many other factors enter into the complex that the proper evaluation of the psychoneurogenic component becomes extremely difficult. Stokes, Beerman, and Ingraham³ make this pertinent comment: "When the dermatologist, through a cooperative arrangement, can share with the psychiatrist a general knowledge of the causative background of skin diseases and can receive from the psychiatrist in a terminology that he can understand some degree of technical illumination as to the action of emotional factors, an entirely new and promising situation will develop."

¹ Rogerson, C. H., and Strauss. *Practitioner* 142: 17 (1939)

² Stokes, J. H. *Internat. Clin.* 1: 147 (1940)

³ Stokes, J. H., Beerman, H., and Ingraham, N. R. *Am J. M. Sc.* 200: 560 (Oct.) 1940

Annual Registration in New York State

This is to remind all the members, indeed all licensed physicians in New York State who may read this notice, that if their registration cards with checks for the \$2.00 fee are not received in the Division of Professional Education at Albany by January 1, 1941, they will be subject to fines for the delay. Under the law, the fine is \$1.00 for each thirty days or part thereof.

COUNCIL COMMITTEE ON PUBLIC RELATIONS AND ECONOMICS

Correspondence

TATTOO CODE FOR THE SERUM SENSITIVE?

To the Editor

Experience with the injuries of the many people who were in the train wreck at Little Falls, New York, last April has led some of us who helped to care for these injuries to a totally new conclusion.

Tetanus antitoxin was needed, and fortunately we were able to avoid a serum accident in two patients who were found to be serum sensitive. The idea came into our minds that it would be well, speaking generally, for serum-sensitive people who might be involved in accidents, as indeed also in war, if a system of tattooing could be devised for those sensitive to serum.

If there had been a tattoo mark on the body of these two patients which would have stamped them as serum sensitive, how much trouble would have been saved. In the very sensitive, even testing with minute amounts of horse serum is not without danger. This might be especially so in an unconscious or shocked patient who would be unable to give a history of sensitivity.

If there were some universally accepted code system which could be tattooed on an inconspicuous portion of the body, perhaps below the left iliac crest, a physician would be able to recognize those people to whom serum should not be given. This is not so important in private practice, but in times of emergency, such as might be encountered in wartime air raids on civilian populations many lives might be saved by such a simple device. Certainly a serum-sensitive individual would not object to a little tattoo mark, if it might be the means of preventing a serious serum reaction or even death. However, an identifying code system such as this would have to be at least nationally accepted. It would have to be simply and easily read, sponsored by some national medical group which would have to educate both the laity and the medical profession and a method of tattooing which could be made available to the medical profession.

A tattoo code would also be used to identify the diabetic, and the epileptic, both of whom are often found unconscious, and often puzzle the physician who is called. Perhaps if such a system could be started, other applications would be found, such as toxic conditions found in pregnancy. Letters might make the most easily adaptable system. For example, a black 'E' could be taken to mean that the person was subject to epilepsy, a black 'D' would identify a patient as being diabetic. Red coloring might be reserved for the dangerous states, so that a red 'S' might indicate serum sensitivity. Underlining or encircling of the letter could be done to indicate greater degrees of sensitivity. A red 'D' might indicate a drug idiosyncrasy.

In this wreck there might have been a diabetic patient who could have slipped by several days

without insulin, or in whom an infection might have developed, merely because we were doing more urgent services than routine urinalyses. Or an epileptic might have had a seizure which would have thrown an entirely wrong slant on a superficial head injury. It is conceivable that even an operative procedure could be avoided on such a patient if the true facts were immediately apparent. It is not claimed that this would be an everyday help to patients, but it would be, in emergencies, a benefit which the medical profession could extend to humanity.

HARRY DAN VICKERS, M.D.
Little Falls, New York

November 30, 1940

[A copy of Dr. Vickers' letter was sent to Dr. Robert A. Cooke and Dr. A. Vander Veer, whose reply is published below. *Editor*]

To the Editor

We think Dr. Vickers' suggestion is a very excellent one and we are heartily in favor of it. It is particularly important in this time of war and air raids on civilian centers. In our specialty of allergy we naturally see an unusually large percentage of serum-sensitive individuals and are greatly concerned with the danger of the condition and the difficulties of treatment.

It will, of course, be difficult and will take some time to make the procedure nationally known and practiced, but it can be done and this is a good time to start. We would like to make two concrete suggestions.

(1) The proposition be referred to the two national bodies of allergists—The Society for the Study of Asthma and Allied Conditions (Secretary, Dr. Will Cook Spain, 116 E. 53rd St., New York City) and The Association for the Study of Allergy (Secretary, Dr. J. Harvey Black, 1405 Medical Arts Bldg., Dallas, Texas) for submission to their respective societies for discussion and action and to the American Medical Association who might be willing to adopt the idea and disseminate it. The War and Navy Departments should also, of course, be consulted.

(2) A serum-sensitive case should be tattooed with a red S— $\frac{1}{2}$ inch high—under the left iliac crest.

Many of these cases are now being given 3 doses of Tetanus Toxoid for active immunity, and after the third dose has been given, a red circle should be tattooed around the S. Such protected cases could be given an injection of Tetanus Toxoid after any accidental injury as then they will rapidly increase their protection.

It is probable that Tetanus Toxoid immunization will soon become routine in the Army and

Navy but under present war conditions the civilian population also needs protection from air raids as well as accidents in civil life

We are less familiar with epileptic and diabetic patients but think the suggestion is also of value for them—but great care must be taken to

keep the procedure simple—too great complication will prevent its widespread use

ROBERT A COOKE, M D

ALBERT VANDER VEER, M D

The Allergy Clinic—Roosevelt Hospital
December 2, 1940

[These letters were brought before the Council of the Medical Society of the State of New York at their meeting on December 12 and the report of this will be published in a subsequent issue —Editor]

Physicians for the Navy

Physicians are needed in the Regular Navy and the Naval Reserve

REGULAR NAVY Applicants must be under thirty-two years of age and must have completed one year's internship They are commissioned as lieutenant (junior grade) and paid \$2,699 per year if having no dependents, or \$3,158 per year if having dependents

A limited number of **FOURTH YEAR MEDICAL STUDENTS** are admitted on acting appointments, with the same pay, given one year's internship in the Navy after graduation and then commissioned

The next examination for both these classes will be held on January 6, 1941 Applications must be submitted early in December

VOLUNTEER NAVAL RESERVE Members are not subject to the Selective Service Draft but obligate themselves to serve in time of war or national emergency If they request it, they may be given active duty at other times

There are two classes of the Volunteer Reserve

(A) *Volunteer General Service Class* Applicants must be under thirty-five years of age They are commissioned as lieutenant (junior grade) (equal to 1st Lieutenant in the Army) or, if of sufficient age and experience, as lieutenant (equal to Captain in the Army) Many will be given aviation training at government expense if they request it **INTERNS** and **RESIDENTS** are eligible to enroll in this class of the Reserve.

The Surgeon General places all interns and residents on the deferred list, and they will not be called to active duty before finishing their internship or residency except in extreme urgency

(B) *Volunteer Special Service Class* This class is composed of doctors who have had special training and are under fifty years of age A limited number of general practitioners are also commissioned in this class The rank is lieutenant (junior grade), lieutenant, or lieutenant commander, dependent upon age, professional standing, and academic seniority If mobilized, they would be assigned to special service within the United States or its possessions or on hospital ships

For further information apply by letter, telephone, or call in person at the District Medical Office, Headquarters Third Naval District, Federal Office Building, 90 Church Street, New York City

RESPIRATORY DEPRESSION DURING ANESTHESIA ATTRIBUTABLE TO CAROTID SINUS DISTURBANCES

A Clinical and Laboratory Study

CHARLES L. BURSTEIN, M.D., New York City

(From the Division of Surgery, Department of Anesthesia, New York University College of Medicine)

PROPER preparation of surgical patients with sedative medication is a phase in the anesthetic regimen which still evades satisfactory management. In general, the sources of error are twofold—namely, (1) improper evaluation of the patient and (2) unwise selection of preanesthetic medication in reference to the anesthetic agent to be employed.

It is unnecessary to include in this discussion more than a brief reference to the evaluation of the patient. Anesthetists and surgeons are already cognizant of the various factors involved in such an evaluation. Guedel in his monograph, *Inhalation Anesthesia*,¹ has an excellent discussion of the consideration that must be given to the patient's metabolism, age, emotional state, fever, pain, and sthenicity when selecting preanesthetic medication.

The second source of error—namely, the selection of preanesthetic drugs with reference to the anesthetic agent chosen for subsequent administration—is probably without sufficient appreciation. It would seem that such mistakes are more common since the recent introduction of anesthetic agents of widely different potencies.

The desirable effects from preanesthetic medication pre-eminently include the control of psychic disturbances and a depression of general metabolism with obtundation of reflex irritability so that a minimum of the anesthetic agent may be needed. It must be emphasized, however, that the degree of sedation should vary inversely with the potency of the anesthetic agent to be employed. If a narcotic agent of low potency, such as nitrous oxide, which requires the admixture of a smaller concentration of oxygen than occurs normally in air, is proposed,

the metabolic activity of the subject to be anesthetized must necessarily be reduced. But when an agent of high potency, such as cyclopropane, divinyl oxide, chloroform, or a short-acting intravenous barbiturate, is chosen, it is not necessary to depress the patient to a similar degree. Mitigation of fear or psychic sedation may then be the primary desideratum.

Errors in the use of preanesthetic medication are reflected during and subsequent to anesthesia in disturbances in the respiratory mechanism—disturbances that are enhanced during inhalation anesthesia by the further derangement of respiration from the anesthetic agent or technic employed. It may, therefore, be apropos to review briefly the physiology of respiration as applied to the subject under discussion.

No function of the organism is so varied in its control as is pulmonary ventilation. Although there has been described a definite respiratory center in the formatoreticularis of the medulla which regulates respiration, this center is merely the servant of a horde of impulses which reach it by way of practically every afferent nerve in the entire nervous system. During anesthesia, certain of the reflexes that influence respiration are depressed or paralyzed. It is, therefore, insufficient to know that a certain drug or stimulus will activate the normal respiratory center. The mechanism involved and whether it is maintained during anesthesia is the more important knowledge.

With increasing depth of anesthesia the rate and rhythm of respiration are altered in characteristic manner as more and more nerve elements are paralyzed. The first change occurs as consciousness is lost when respirations assume the regular rhythm with equal minute volume

respiratory exchange similar to that obtained during normal sleep. This is occasioned by the loss of emotional activity and volitional control which are responsible for irregular and unequal respirations that may occur in the non-anesthetized individual. During surgical anesthesia, paralysis of the somatic central nervous system prevails and with it is lost all reflex control of respiration which is usually mediated through this system, pain, surface heat or cold, and proprioceptive, auditory, visual, and other sensations no longer influence respiration which is now solely under control of the autonomic nervous system.

Certain of the autonomic respiratory reflexes that are maintained during anesthesia are well known, others are still obscure. One important group of reflexes is to be found in the *pulmonary vagi*. Hering and Breuer (1868) showed that inspiratory dilatation of the lungs produces an expiratory response, whereas deflation of the lungs elicits an inspiratory reflex. These reactions do not occur after cervical vagotomy. Heymans² (1927) made a more conclusive experiment to demonstrate these reflexes. The *vagi* were left intact in a decapitated dog while the circulation of the "isolated" head and lungs were maintained through circulatory anastomosis with two other dogs. One could then observe that inspiratory dilatation of the lungs caused expiratory reflexes in the isolated head, whereas deflation of the lungs was accompanied by inspiratory reflexes in the head.

The *pulmonary vagi* are likewise concerned in the production of *vagal apnea*, which is occasionally utilized by anesthetists for "controlled respiration." This apnea would be due to reflex inhibition of the respiratory center caused by frequent and exaggerated pulmonary distention. It is characterized by relaxation of the diaphragm and expiratory position of the thorax.

Although the *pulmonary* vagosensitive nerve endings are not sensitive to physiologic biochemical stimulants, they may be activated by very intense stimuli with

resulting hyperpnea due to vagal reflexes. The hyperpnea occasioned by the inhalation of irritating gases could be so explained.³ According to Schmidt,⁴ the increased respiratory rate during ether anesthesia is likewise due to the irritant effect of the ether vapor upon the Hering-Breuer reflexes.

Another group of respiratory reflexes arise from a number of vasosensitive areas of which the cardio-aortic and carotid sinuses⁵ are better known. These vasosensitive areas react to changes in pressure. The pressure alterations may be of circulatory origin, such as increased or decreased arterial tension in these areas, or they may result from direct mechanical stimulation during surgical manipulations involving the reflex centers. Whatever the origin, the response is consistent while the reflex irritability is not greatly depressed or paralyzed. An increase in pressure at the cardio-aortic and/or carotid sinus will ordinarily result in some respiratory depression, whereas a decrease in pressure may cause some degree of hyperpnea. This is one reason for recommending the topical application of procaine solution when respiratory or circulatory disturbances occur during surgical intervention in the cervical region.

Biochemical alterations in the circulating medium are more potent sources of abnormal respiratory activities. These chemically aroused reflexes may act either directly upon the respiratory center or through the intermediary of the carotid body.⁶ When the motor cells in the respiratory center become progressively paralyzed due to excessive central depression, the carotid body mechanism remains active and assumes great importance during anesthesia. The physiologic chemical stimuli consist mainly in alterations of carbon-dioxide or oxygen concentrations in the blood. Increase of carbon dioxide will normally stimulate respiration by direct action upon the respiratory center as well as by stimulation through the carotid body. It must not be forgotten, however, that the optimum concentration for the stimulating ef

fects of carbon dioxide is reached rapidly, and, when this point is exceeded, opposite effects will result. Thus, in the normal individual the inhalation of concentrations of 20 to 30 per cent carbon dioxide exerts a narcotic action⁷ without respiratory stimulation, and, shortly exceeding these concentrations, depression of both respiration and circulation followed by death will occur unless artificial respiration with pure oxygen is immediately instituted. The patient with disease and acid-base balance disequilibrium may be affected with much smaller amounts of carbon dioxide. It cannot be overemphasized that when the administration of low concentrations of carbon dioxide does not result in the usual respiratory stimulation the increase of carbon dioxide should be attempted with utmost caution.

Samson Wright⁸ and others^{9,10} have shown that asphyxia depresses the cells of the respiratory center and that the stimulation of respiration observed by oxygen lack is due mainly to the carotid body. Heymans has shown further that, after denervation of the aortic and carotid areas, deprivation of oxygen is followed by respiratory depression that may lead to respiratory arrest and death without hyperpnea at any time. This is of special interest, since the same complication may occur during anesthesia if the anesthetic agent is one which paralyzes the carotid body mechanism (ether, chloroform, intravenous barbiturates)¹¹ or when anesthesia is administered to a patient who has previously been subjected to bilateral carotid sinus denervation as a therapeutic measure.

Preoperative medicaments also influence respiration. Waters¹² has shown that therapeutic doses of morphine decrease minute volume exchange in human subjects. There is convincing evidence that the oxygen lack thus occasioned enhances the central depressive effect and that the carotid body mechanism then compensates for the impaired respiratory center.¹³ *Atropine*, *scopolamine*, and other drugs of the belladonna group are parasympathetic depressants. They

aid in reducing mucous secretion to favor anesthesia, but they also depress the sino-aortic mechanism.¹⁴ *Barbituric acid derivatives* likewise paralyze the carotid body and, in addition, may predispose to laryngospasm^{15,16} and exert a bronchoconstricting action which may prove to be of importance in asthmatic individuals.

In a previous communication¹⁷ clinical case reports were presented which showed the occurrence of respiratory depression during anesthesia when a potent gaseous anesthetic agent was administered with a high dilution of oxygen following relative excess sedation. A similar clinical case is here presented.

Case Reports

Case 1—A white man, aged 41, developed a strangulated inguinal hernia. Preoperative medication, administered subcutaneously at 1:00 A.M., was morphine sulfate $\frac{1}{4}$ grain (0.016 Gm.) and scopolamine hydrobromide $\frac{1}{100}$ grain (0.0005 Gm.). One hour later upon arriving in the operating room, the patient was asleep. He could be aroused but reacted sluggishly. Anesthesia was induced with cyclopropane and oxygen. A closed system without a carbon-dioxide absorbing unit was employed in the beginning. Four minutes after induction was started the patient's respiratory excursions began to decrease gradually, and one minute later he ceased breathing. At this time the pulse rate had decreased from 96 to 80 beats per minute, the blood pressure was unchanged (120/80 mm. Hg.), and the color of the skin was pink. Administration of pure oxygen and artificial respiration by rhythmic manual pressure on the breathing bag for three minutes did not restore spontaneous breathing. Apnea could not have caused this apnea, since the patient had been rebreathing without carbon-dioxide absorption for seven minutes. The anesthetic mixture was then increased with nitrous oxide, and, after several inflations, the patient began to breathe just as his skin showed a cyanotic tinge. The addition of more oxygen relieved the cyanosis, but five minutes later the patient again ceased breathing. As for the first apnea, oxygen and artificial respiration were unsuccessful. Administration of carbon dioxide by removing the soda-lime canister for several minutes was likewise of no avail. As before, the addition of nitrous oxide terminated the apnea.

In the course of the next thirty minutes, two more such apneas occurred, both of which were similarly relieved by reducing the oxygen concentration in the breathing mixture. At the end of the operation, the patient appeared to be in light surgical anesthesia, with roving eyeballs and swallowing reflexes, but the pupils were narrowly contracted. Fifteen minutes after anesthesia had been discontinued it seemed that the degree of narcosis was, paradoxically, slightly deeper. This was attributed to morphine depression. Metrazol was administered in an attempt to counteract the condition.¹⁸ One cubic centimeter intravenously and a similar amount hypodermically showed little effect. After ten minutes an identical amount was injected intravenously. One minute later hyperpnea developed, the patient awoke abruptly and responded immediately to spoken questions. Recovery was uneventful.

Case 2—A white girl, aged 17, was brought to surgery with a diagnosis of frequent convulsions, etiology undetermined. Craniotomy had been performed on two previous occasions. Two years previous to the present admission, a bilateral carotid sinus denervation had been done. Nitrous oxide-ether anesthesia was proposed. No preanesthetic medication had been given. Induction was started with a mixture approximating nitrous oxide 95 per cent and oxygen 5 per cent. After three or four moderately deep respirations, the patient stopped breathing. Spontaneous respirations were not resumed for about two minutes, when the lungs were inflated with oxygen. It was possible to repeat this apnea by allowing the patient to respire an atmosphere deficient in oxygen. When ether was added, respirations proceeded uninterrupted. After induction of ether anesthesia, maintenance was uneventful for the succeeding two hours of the administration.

Discussion

In Case 1 the quantity of sedative medication administered to the patient resulted in a degree of depression equivalent to basal narcosis, the patient being asleep but still reacting to strong stimuli. Anesthesia was supplemented with a rapid-acting potent agent, and a high percentage of oxygen was simultaneously added into the rebreathed mixture. There was an improvement in the color of the patient immediately following the inhalation of the high oxygen mixture, but respiratory arrest ensued within two minutes and was maintained either until

cyanosis appeared or until the anesthetic agent was practically completely eliminated.

In Case 2, after denervation of the carotid sinus, the production of asphyxia by nitrous oxide failed to elicit an anoxic stimulus by way of the carotid body. Respiratory arrest followed the breathing of an oxygen-poor atmosphere. The apnea was relieved by oxygen.

One explanation for the respiratory reactions cited in the cases described is found in some recent related experimental observations. Marshall and Rosenfeld¹⁹ have demonstrated that when morphine and/or barbiturates are administered to cats, dogs, or rabbits in doses sufficient to cause respiratory depression and an oxemia the administration of pure oxygen or of mixtures of oxygen with 5 to 10 per cent carbon dioxide results in further respiratory depression or apnea and respiratory failure. They point out that three conditions are necessary to produce this atypical reaction: a depressed respiratory center, oxygen lack, and a functionally active sino-aortic mechanism. They, and others,^{20, 21} have also corroborated Heymans'²² original observation that anoxia causes depression of respiration when the sensitive areas in the carotid sinus and aortic arch are denervated, and they conclude, therefore, that anoxia stimulates the sino-aortic mechanism which, in turn, maintains respiration when the respiratory center is depressed. Stella,⁹ after setting forth similar conclusions, stressed the importance of oxygen lack under these conditions as a stimulus to respiration. He found that the administration of a mixture of 5 per cent carbon dioxide and oxygen, with or without 30 per cent nitrogen, depressed instead of stimulating respirations as it normally would in response to the increased carbon-dioxide tension.

The exact localization of the chemically sensitive receptors responsible for this reaction was believed, originally by Heymans and his co-workers, to be in the carotid body. This has been definitely established by Comroe and Schmidt.⁶

Laboratory Experiments

Marshall and Rosenfeld's experiments were confirmed in rats during the course of study and evaluation of sodium thioethylamyl, a new barbituric acid derivative.²³ It was noted that the response to oxygen inhalation differed materially according to the lapse of time intervening after the injection of a large dose of this barbiturate. Rats treated with oxygen two to five minutes after the appearance of respiratory difficulty recovered, but those in which cyanosis and dyspnea had persisted for more than one-half hour before oxygen inhalation was given responded by shallower respiration followed by periods of apnea and finally death.

Experiments simulating the same conditions observed clinically were carried out in dogs which lend themselves readily to the production of this type of respiratory depression. The accompanying protocol shows the effect in one such experiment.

Dog No 32 Weight 13 Kg

- 2 30 Intravenous injection of a 2 per cent solution of morphine sulfate, 50 mg per kilogram of body weight. (Fifty milligrams per kilogram for the dog is ten times the usual sedative dose and one-tenth of the M.L.D.)
- 3 00 Animal depressed. Endotracheal tube introduced transalaryngeally into the trachea. Pneumographs applied about the chest and abdomen to record thoracic and diaphragmatic respiratory movements
- 3 05 A mixture of 20 per cent cyclopropane and 80 per cent oxygen is administered by means of the closed carbon-dioxide absorption technic. Apnea in thirty-seven seconds, thoracic and abdominal respiratory movements ceased at the same time
- 3 07 Cyclopropane discontinued.
- 3 08 Nitrogen added to the rebreathed mixture. Apnea persists for eight minutes until when the thoracic and abdominal respiratory movements recur at the same moment. At this time cyanosis is evident on the dog's tongue.
- 3 16 The breathing bag is filled with oxygen. Cyanosis quickly disappears, but one minute later apnea occurs again.

Summary

Recent experimental data are reviewed which reveal that when the respiratory center is depressed by a sedative drug with resulting anoxia the inhalation of oxygen may be followed by respiratory de-

pression or even apnea. It is pointed out that under these conditions of depressed respiratory center and oxygen lack respiratory movements are maintained by the anoxic stimulation of the carotid body. Removal of the "anoxic stimulus" following the inhalation of sufficient oxygen inactivates this carotid body mechanism and leaves an uncompensated depressed respiratory center.

Laboratory experiments are described which demonstrate the ease of producing this type of respiratory depression when excess morphine medication is succeeded by the administration of a potent anesthetic agent (which enhances the central depression) together with adequate oxygenation.

A clinical case report is presented which shows the possibility of respiratory depression during anesthesia when adequate oxygenation and a potent, rapid-acting, anesthetic agent are administered following relative excess sedation.

When the carotid body mechanism is paralyzed or denervated as in Case 2, reduction of oxygen in the inhaled mixture results in respiratory depression.

Because of the damage to the central nervous system, asphyxial stimulation of respiration is to be condemned. Artificial or "controlled" respiration with adequate oxygenation should be maintained until the respiratory center can function properly and unaided.

For the prophylaxis of such complications it cannot be overemphasized that the degree of preanesthetic sedative medication should be reduced when the use of a more potent anesthetic agent is contemplated.

Grateful acknowledgment is expressed to Dr. E. A. Rovenstine, professor of anesthesia, for guidance in this work.

477 First Avenue

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SURVEY OF ARTIFICIAL INSEMINATION

A survey of artificial insemination and its use in the United States by the medical profession was sponsored by the National Research Foundation for Eugenic Alleviation of Sterility, Inc., Nesconset, Long Island. The following report was made by the medical director, Dr F I Seymour, and Dr A Koerner, executive secretary.

There are 150,000 doctors in the United States, 30,000 of whom were sent questionnaires, 7,642 doctors sent in replies. 4,049 reported successful results with artificial insemination, 2,478 reported that they had never used it, and 1,115 failed to obtain pregnancies by using it.

The following is a census of children produced by artificial insemination to June, 1940: total number of live children born of artificial insemination, 9,238; total number of pregnancies initiated, 9,489; result of artificial insemination using husband (temporary sterility), 5,728—(a) boys, 3,623, and (b) girls, 2,105; result of artificial insemination using donor (absolute sterility of male), 3,510—(a) boys, 2,060, and (b) girls, 1,450.

Mothers having more than one pregnancy by artificial insemination numbered 1,357, with 3 sets of twins. The number of surgical operations (to effect pregnancy) avoided totaled 382 so that the ratio of total pregnancies to surgical operations prevented was 24.8 to 1.

The question "What was the average number of inseminations employed to effect pregnancy?" was answered as follows by

(a) The 1,115 physicians who failed to obtain pregnancy by artificial insemination. Fifty physicians gave no specific number of inseminations, so that 1,065 answered as follows: 740 tried one insemination, 111, two inseminations, 91, three inseminations, 83, four inseminations, 7, five inseminations, and 33, six inseminations.

(b) The 4,049 successful physicians reported 3 pregnancies resulted after one insemination, 17, after two inseminations, 409, after three inseminations, 61, after eight inseminations, 897, after nine inseminations, 4,312, after twelve inseminations, 1,918, after fourteen inseminations, 1,003 after fifteen insemina-

tions, 367, after eighteen inseminations, 139, after twenty inseminations, and 241, after twenty-one inseminations. One hundred and twenty-four physicians reported success after more than twenty-one inseminations, and one physician reported that pregnancy was effected after the seventy-second insemination.

SUMMARY

The greatest number of physicians reported pregnancies after twelve inseminations which varied three inseminations for four months, four inseminations for three months, or two inseminations monthly for six months. A few varied the procedure slightly over the twelve inseminations.

The geographic distribution of children sired by artificial insemination as reported by physicians is as follows: Central, 2,602; Atlantic, 2,997; New England, 1,514; Pacific, 617; Mountain, 96; and Southern, 1,663. An analysis of physicians' replies by geographic sections shows: Central, 2,389; Atlantic, 2,520; New England, 930; Pacific, 302; Mountain, 124; and Southern, 1,377.

The total number of miscarriages and abortions was 217 (2.3 per cent of total number of pregnancies). The incidence of miscarriages and abortions in so-called normal patients was 10 to 20 per cent.

The total number of extra-uterine pregnancies was 22 (0.2 per cent of total number of pregnancies)—intra-vaginally inseminated, 2; intra-cervically inseminated, 11; and intra-uterinely inseminated, 9. The incidence of extra-uterine pregnancies in so-called normal patients was 1.3 per cent, and inseminations where some solution was added to specimen numbered 3,831 (40.3 per cent).

The number of "flare ups" reported through uterosalpingography was 44, with the following distribution of types: acute salpingitis, 11 (unilateral, 7, and bilateral, 4); pelvic abscesses, 3; marked abdominal cramps, 28; pelvic peritonitis, 7; and dermatitis venenata, 5. There were 9 flare-ups cited above requiring operative interference, and 6 flare-ups with retention of the oil in diseased salpinx.

NATIONAL SOCIETY FOR THE PREVENTION OF BLINDNESS

Offices of the society have been moved from 50 West 50th Street to 1790 Broadway, New York City. Mr Wm Fellowes Morgan has resigned as president after serving continuously from March, 1916, to May, 1940. He was unani-

mously elected president emeritus. Much credit for the growth and progress of this national voluntary health agency, with a supporting constituency of 17,000 people, is due to Mr Morgan's interest in the affairs of the society.

THE OCCIPITOPOSTERIOR POSITION AND THE MODIFIED SCANZONI MANEUVER

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OF THE various complications of labor which beset the accoucheur, none is more frequently encountered than the occipitoposterior position.

Indeed, the faulty management of this condition is not infrequently read between the lines of the past obstetric history of many mothers who have given birth to stillborn children or to infants who succumbed shortly after instrumental delivery following prolonged labor at term. DeLee¹ justly attributes to such faulty management the appalling annual total, in the United States alone, of several thousand infant deaths and hundreds of maimed or invalided mothers.

Such avoidable mortality and morbidity calls for a consideration of the means at our disposal whereby these unhappy results can at least be reduced in number and is the incentive for this presentation.

It has been estimated that 95 per cent of all cases are vertex presentations at the beginning of labor. In approximately one-third of this number the occiput is directed posteriorly, right occipitoposterior (occiput dextra posterior, 135 degrees) or left occipitoposterior (occiput laevus posterior, 135 degrees). For the same reasons that explain the greater frequency of the left anterior position, left occipito-anterior (occiput laevus, 35 degrees), the occiput in most posterior positions is in the same oblique diameter, right occipitoposterior (occiput dextra posterior, 135 degrees).

The mechanism of labor in the posterior position presents one main difference from that in the anterior position—rotation in the former takes place through an arc of 135 degrees, while in the anterior position the occiput describes an arc of 45 degrees.

Engagement of the head in occipito-

posterior position occurs more slowly, partly because of the promontory and partly because of an almost constant deflection or "military" attitude of the presenting part brings a less favorable cephalic diameter (the occipitofrontal instead of the suboccipitobregmatic) into the pelvic inlet. Because of the existence of these factors, all of them unfavorable in tendency, internal rotation of the head in the posterior position if it occurs at all, consumes more time.

Often the membranes rupture early, delaying the progress of labor, and, as the hours drag by, increased risk to mother and baby is inevitable. Exhaustion, inertia, and hemorrhage threaten the mother, while the prospect of a stillborn child becomes real in the neglected case. Lacerations here are more extensive than usual, especially if the head rotates posteriorly to the hollow of the sacrum. It is not surprising, therefore, that "more children are lost from this complication than are lost from the effects of contracted pelvis" (DeLee²).

Obviously, all of these dangers cannot be eliminated, but to minimize them, by whatever means may assure him of the best results, becomes the duty of every obstetric attendant. The experienced obstetrician faces the situation unperturbed and confident. The casual attendant often finds himself in a quandary.

The proper management of a given case begins with the diagnosis of position. Failure to do this early or failure to do it at all is responsible for no small share of the misfortunes attributed to this position. The consequences of error are here so hazardous that every vertex labor that does not proceed smoothly should be carefully scrutinized for the possibility of a mistake in this direction.



FIG 1 The Tucker-McLane forceps The smooth solid blades make application and withdrawal easier

Once the existence of posterior position has been established, the prudent attendant fortifies his patience, adopts an attitude of "watchful expectancy," and awaits some indication for interference.

The greatest danger during the period of dilatation, in the average case, is exhaustion of the mother. To offset this, morphine and scopolamine, rectal anesthesia or analgesia, and a labor room free from baneful external stimuli, such as bright light, noise, or conversation, are the mainstays during the first stage. All internal examinations are made through the rectum. Rupture of the membranes is to be prevented, if possible, until the cervix is completely dilated. Expulsive efforts on the part of the patient, while not to be encouraged during the first stage of any labor, are here particularly to be condemned.

Usually, the cervical canal, if given time enough, will spontaneously become completely effaced and the os fully dilated. At times, however, the colpeurynter, especially when the membranes have ruptured early, is indicated. Rarely, when progress has apparently ceased in spite of continued labor, what remains of a soft, readily dilatable cervix can easily be stretched by gentle manipulation. More rarely, the rim of an incompletely dilated, rigid cervix must be incised and repaired after delivery. To attempt delivery through an imperfectly dilated os is to invite complications far worse than that which already exists.

Operative treatment is seldom indicated before the advent of the second stage and even then is frequently unnecessary, the occiput rotating spontaneously

in over 70 per cent of the cases. A simple prophylactic forceps operation, with or without episiotomy, may then be considered optional.

Postural treatment (having the patient lie on the side toward which the fetal back is directed) for the correction of the faulty attitude and to bring about internal rotation, while a perfectly commendable procedure, is obviously difficult in a patient who is under the influence of anesthesia and who is, therefore, unable to cooperate.

In about 5 per cent of the cases, the head, after complete dilatation, is found floating (with intact membranes) or is arrested high in the pelvis. For this small group, version followed by breech extraction, particularly in the multipara, is favored by most obstetricians, especially when intact membranes facilitate turning of the child.

In the 25 per cent remaining, the head is found arrested at various levels within the pelvis, the occiput still occupying its relation to the posterior quadrant. For the treatment of this group a number of methods have been suggested. All of them, in competent hands, are productive of good results. The principal aim of each of them, excepting those treated by version and extraction, is directed toward the same end—namely, rotation of an occiput posterior to an occiput anterior, while the means by which rotation is accomplished is either the hand of the accoucheur or the obstetric forceps.

While it may be true that the best method is that one to which the operator has best trained himself, it is no less true that manual correction usually calls for the insertion of the whole hand into the vagina, with displacement of the head upward and out of the pelvis to secure the degree of internal rotation necessary. This procedure, however, increases the danger of infection and invites the possibility of prolapse of the cord. Even after rotation has been accomplished in this manner, backward rotation of the occiput, after the hand is withdrawn from the head and before the blades of the forceps can be applied, is an exasperating and frequent occurrence. DeLee³ recommends here

the use of an Allis clamp (or of a double volsellum forceps), by which the scalp, after rotation, is firmly grasped and steadied by an assistant until the forceps can be applied.

The Pomeroy maneuver, recently described by Aranow,¹ is manual rotation whereby the body of the baby is rotated on its own axis 180 degrees, thus bringing the sagittal suture back into the same oblique diameter of the pelvis. In this manner the right occiputoposterior position (occiput dextra posterior, 135 degrees) is converted into left occipito-anterior (occiput laevus, 45 degrees) or left occiputoposterior (occiput laevus posterior, 135 degrees) into right occipito-anterior (occiput dextra, 45 degrees).

The method of Tarnier and that of Hodge both aim at correction of malposition by intravaginal manipulation and digital pressure, without displacement of the head. Both methods sometimes produce the desired result.

Until comparatively recent years rotation was not included among the "properties" or "functions" of the forceps. Smellie,² in 1752, was perhaps the first to perform instrumental rotation. In 1865 Scanzoni³ devised a method of delivery whereby rotation and traction together were the principal features. It was after him that the original Scanzoni maneuver for the treatment of occiputoposterior positions derived its name. But rotation in these instances was doubtless imparted to the head by twisting of the handles of the forceps (Fig 2a), for it was not until later (1881) that Tarnier³ brought forth the idea of sweeping the handles through a large circle to effect rotation of the head within the pelvis.

Needless to say, traction with rotation in the form of a spiral twist was not long popular, and, as a consequence of many serious injuries to the pelvic floor attributed to this operation, the Scanzoni procedure fell into disrepute.

It remained for Bill,² of Cleveland, by the "modified" Scanzoni maneuver, to prove unmistakably that the forceps can properly and safely be used as a rotator and that, in this respect, it is often supe-

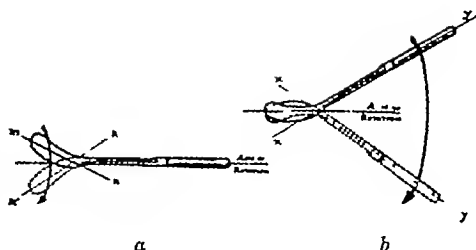


FIG 2 (a) The wrong way. Such twisting causes the tips of the blades to tear the bladder and vagina as the tips of the instruments describe an arc. (b) The correct method. Rotation of the handles through a wide arc causes the blades to revolve about their own axis. The integrity of the soft parts is thus preserved.

rior to the hand because the blades do not displace the head as does the hand. Indeed, to the accoucheur the forceps is but an extension of the hand and should be used as such in the performance of his art—much as the surgeon uses his knife or as one uses a pen with which to write. The instrument is but the *agent* through which the hand operates.

The technic of this operation is neither difficult nor dangerous. Properly executed it provides not only a beautiful obstetric maneuver but also a means by which may be avoided many of the unhappy results accredited to this position of the head.

It is necessary, first, that the attendant be familiar with the use of instruments and that all of the conditions governing the use of forceps be present. After the bladder is emptied the maternal soft parts are carefully prepared by the liberal use of a neutral liquid soap, which not only assists in "ironing out" the pelvic passageway but acts as an ideal lubricant for the passenger as well. The exact position of the head is then carefully determined, the posterior ear being located if necessary.

The choice of forceps depends upon the operator. Those commonly preferred are the Tucker-McLane variety (Fig 1), solid blades with a long shank. The reason for this preference lies in the ease of their introduction, rotation, and withdrawal, which renders their selection ideal for this operation.

The first application is made exactly as for the opposite anterior position. For

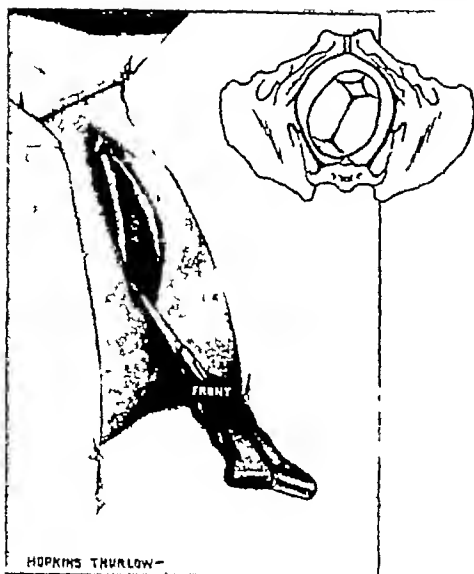


FIG 3 The first application. Insert represents right occipitoposterior. Notice that the application is as for left occipito-anterior

right occipitoposterior (occiput dextra posterior, 135 degrees), the first application, then, would be as for left occipito-anterior (occiput laevus, 45 degrees), the pelvic curve of the forceps in the initial application thus being directed toward the baby's forehead. An accurate cephalic application is essential to avoid slipping of the blades during rotation (Fig 3)

The forceps are now locked. To increase flexion and to free the head from the grasp of the soft parts, the handles, gently compressed, are carried to the patient's thigh toward which the baby's face is directed. In this movement the handles traverse a line parallel with that of a sagittal suture (Fig 4)

From this point, rotation is accomplished with a gentle sweeping motion, the handles describing a large arc, thus keeping the blades in approximately the same axis (Fig 2b). The fingers of the free hand, meanwhile, are touching the occiput to apprise the operator of the degree of anterior rotation. Rotation is continued until the occiput, passing through the transverse and the anterior positions, finally occupies the directly anterior or zero position and the handles of

the forceps, inverted, become directed toward the floor (Figs 5, 6, and 7). No traction has been employed up to this point. The head has rotated in the same plane it occupied at the beginning of the maneuver, and only the abnormality of position has been corrected. Excessive force to accomplish rotation is contra indicated.



FIG 4 The handles are locked and elevated toward the thigh opposite the occiput. This is to free the head and to secure flexion, as represented by the insert

To overcome backward rotation of the occiput, slight traction toward the floor is now exerted upon the inverted handles. This fixes the head in its new position before the second application is made.

In the reapplication of the forceps, the posterior blade is inserted first. This aids in steadying the head and in preventing its displacement during the application of the anterior blade.

The pelvic curve of the instruments now is directed toward the occiput.

The remainder of the delivery is completed exactly as that of any other occipito-anterior position.

The use of the forceps to accomplish delivery in cases of posterior position has become increasingly popular. Special

types of blades, such as the Kjelland forceps, have been devised. Seides,⁸ emulating Bill, introduced his "two-forceps maneuver," while later DeLee described his "key-in-lock" operation.

It may not be amiss here to add that "not force, but art" is the prerequisite to every obstetric procedure. The untutored hand reflects its lack of skill in dead

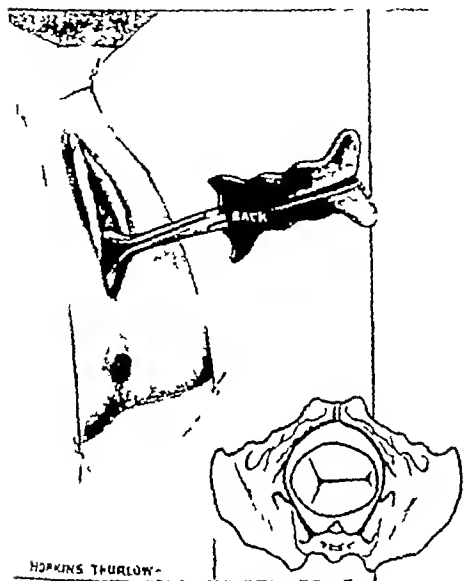


FIG 5 Without traction the rotation is started. Diagram represents rotation to right occiput transverse.

or mutilated children and in extensive damage to the birth canal. The excellent survey of Miller⁷ reveals 2 cases of fracture of the parietal bone and 7 dead children after forceps rotation and delivery in 35 cases.¹ To employ such force as is required to fracture an infant's skull is reprehensible, to say the least. Since failure of the head in the posterior position to descend spontaneously is usually due to the faulty position, forcible traction upon such a head to bring it to a lower pelvic place before rotation is also reprehensible.

Conclusions

1 The diagnosis of position is essential to the proper management of any labor.

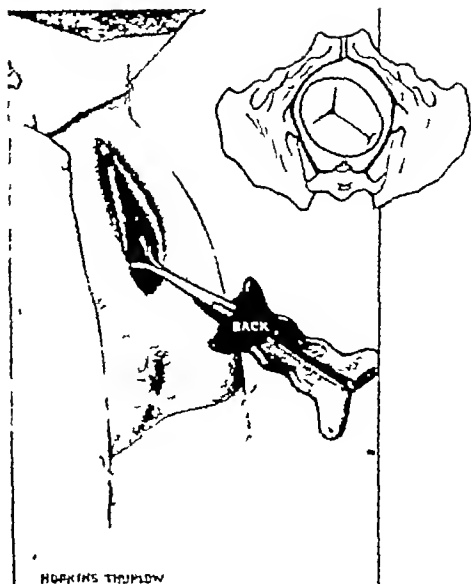


FIG 6 Rotation without traction is continued. Note the wide arc described by the handles. Position, as shown by the insert, is now right occipito-anterior.

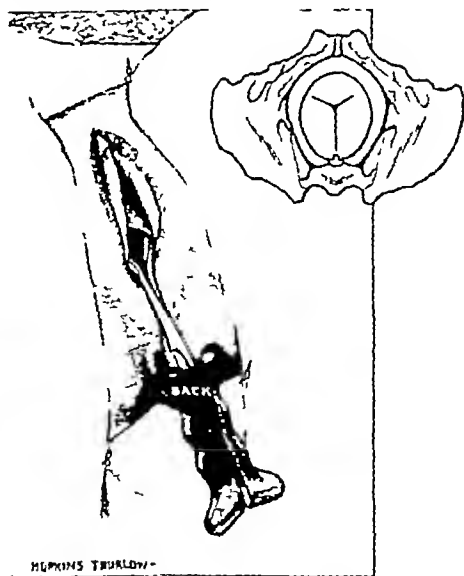


FIG 7 Rotation is continued to the zero (occipito-anterior). Now traction is used to fix the head in occipito anterior until the reapplication is accomplished. The delivery is then completed as an ordinary forceps case.

2 Occipitoposterior positions, if neglected, cause increased fetal mortality and maternal morbidity.

3 Usually, during the first stage of labor in these cases, interference is not indicated except for conservative treatment for the support of the patient.

4 In the second stage, rotation of the occiput manually or by means of forceps is often necessary to complete the delivery.

5 The modified Scanzoni maneuver, if more thoroughly understood, offers here certain advantages over other methods of delivery.

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Discussion

Dr Joseph O'C. Kiernan, *Albany, New York*—The many operative procedures that have been devised for treating the complications that may arise in occipitoposterior position emphasize the importance of this subject.

Dr Pieri, by means of his paper, pictures, and slides, has given a very excellent presentation of this problem. He not only emphasizes that with conservative treatment 70 per cent of the cases will have a spontaneous delivery but, in addition, describes a method of operative termination of the remaining 30 per cent which minimizes the dangers to both mother and fetus.

Relieving the discomforts of the frequently prolonged first stage of labor by means of analgesia is most important in conserving the strength of the mother. Nevertheless, the medication should preferably not cause undue excitation. Rolling and twisting of the patient interfere with the long axis of the fetal ovoid remaining parallel to the long axis of the maternal abdomen at the height of each uterine contraction. We all realize the necessity of this in facilitating engagement and descent of the presenting part.

An occasional but unnecessary cause of concern is failure to realize that spontaneous anterior rotation of the occiput cannot occur until after both the cervix is fully dilated and the membranes have been ruptured.

Verification of the position is most important if there is a prolonged second stage, because occasionally in a well-molded head with a large caput

one of the frontal bones is mistaken for the occipital bone and an attempt is made to deliver the fetus with the occiput posterior in the belief that it has already rotated anteriorly. Naturally, this increases the trauma to both mother and fetus.

If the presenting part is high in the pelvis or floating after the cervix is fully dilated, I prefer artificial engagement followed by artificial rupture of the membranes rather than an elective internal podalic version followed by breech extraction. Many of these cases (particularly if multiparas) will advance and deliver spontaneously. If not, I believe a trial of second stage for a period of at least one and one half or two hours will either advance the presenting part until a relatively easy Scanzoni is possible or, if not, there is the advantage of having some molding on the aftercoming head if we feel that an internal podalic version and extraction is still indicated.

I have successfully used the modified Scanzoni maneuver both in my private practice and on my teaching service for many years. I have found it to be followed by a very low incidence of both maternal and fetal trauma. I think it is less radical and less dangerous than many of the other methods advocated for treating persistent occipitoposterior positions. However, I wish to emphasize that the safety of the procedure depends on the proper understanding of the mechanics of the maneuver. It may become a very dangerous operation in the hands of the novice or the pseudo-obstetrician. I think it is our duty to make this clear to both the postgraduates and the undergraduates in medicine who may be attending deliveries where this procedure is utilized.

It has been a great pleasure to have listened to Dr Pieri's very thorough and practical discussion of this most important subject. I feel that he has made a very valuable contribution to the study of the occipitoposterior position and the modified Scanzoni maneuver.

Dr Milton G. Potter, *Buffalo*—Dr Pieri should be complimented upon the clear exposition of a maneuver at which he is so adept. At the present time the literature is filled with articles concerning the puzzling problems of cephalopelvic relationship, which simply means more thought is being given to the causes and to the earlier recognition of probable obstetric difficulties and the correction of them by proper operative procedures.

My personal belief, after a careful analysis of our cases in the past fifteen years, is that very seldom does the occiput enter the inlet in an anterior position but, rather, it enters the true pelvis as a posterior or transverse, and, as the mechanism of labor progresses and the fetal head de-

scends into the pelvis, it rotates anteriorly in normal cases

It has appeared to us who do vaginal examinations exclusively that in the majority of cases we find the head halfway between the transverse and the occipitoposterior. This is especially true after the head has entered the inlet.

In the light of Steel's corroboration of Caldwell and Molloy's studies, showing by x-ray that the majority of fetal heads engage in the transverse position, it is highly probable, if we had carefully felt both fontanels, that the majority of cases we diagnosed early in the second stage of labor as being halfway between a posterior and a transverse were in reality transverse positions.

Unfortunately, in about 25 per cent of the cases, dystocia in its various aspects, such as malformed pelves, soft parts obstruction, fibrosis of the uterus, and indefinite labor pains, interferes with the normal mechanism of labor of the oncoming fetal head, and we are confronted with failure of the head to advance properly because of the various degrees of faulty attitude and position of the fetal head. Patients exhibiting the dystocia dystrophia syndrome invariably present such complications of the normal mechanism of labor and tax the cautious obstetric judgment, ingenuity, and skill of the obstetrician.

While it is true that various clinics emphasize and are partial to certain obstetric maneuvers and procedures for the abnormal position and arrest of the fetal head, it must be remembered that no one procedure will be effective in eliminating all the complications in successive cases.

Individualization of each case should be the keynote, and procedures should be used that are appropriate for that particular case, in other words, obstetric measures should be chosen to fit the patient and not the reverse.

Dr Caldwell and his associates at Columbia University have made the medical profession more conscious of fetal-pelvic relationships by their study of the pelvis in relation to the type and difficulty of the delivery. They feel that the arrest of the fetal head in posterior positions is found in, what they designate, the ample android type, which would correspond to the type found in the group some of us call the dystocia dystrophia syndrome type and in the flat type of pelvis with a backward sacrum.

These cases are handled by them, for the most part, with the Barton forceps with which they

make a cephalic application and pull the head down in its original position until it is near the outlet. Then it is rotated anteriorly and delivered.

In another part of the country, Dr Bill and his associates, one of whom is Dr Pieri, are very prone to use the Scanzoni maneuver, a modification of which was explained to us today.

If this procedure is used, emphasis should be placed on the so-called monkey-wrench motion to be used in the rotation of the head, for if it is not, much damage to the mother's soft parts can be done by the tips of the blades. Slight dislodgment of an impacted head, followed by the flexion maneuver before rotation is attempted, is also to be emphasized.

We, when the occasion arises in our practice, feel that the time to treat a posterior position is early in the second stage before fatigue develops, and we are prone to do a version and extraction if the head can be lifted out of the inlet. Thus, we avoid the pitfall of attempting this procedure after a long labor with a dry uterus, which is firmly molded around the fetus, and with a head jammed in the pelvis.

In that type of case, my father, Dr Irving W Potter, usually resorts to manual rotation of the head to an anterior position when the forceps are applied while I much prefer the Kjelland forceps because of the ease of the single application and rotation.

However, the obstetrician must remember that there are certain types of pelves, particularly the anthropoid type, in which it is a great mistake to attempt any method of rotation, whether it is associated with the modified Scanzoni maneuver or with the Kjelland forceps. We feel that it is much better to deliver such a case as a posterior rather than forcefully attempt to rotate the largest diameter of a fetal head through the narrowest part of the pelvis.

It is, therefore, fairly obvious that even though obstetric groups are more partial to one particular procedure than another in dealing with arrested posterior and transverse positions of the fetal head, which in the main are due to various degrees of disproportion, there comes a time when familiarity with all the various procedures is essential if the best results are to be obtained.

Dr Pieri's modified Scanzoni maneuver is another worthwhile procedure to be included in the armamentarium of the obstetrician.

Banner ratings for communities in New York State with high percentages of children under five years immunized for diphtheria are revealed in *Health News*, with Middletown and Peekskill

showing 100 per cent, Johnson City 99, Mamaroneck 94, Newburgh 92, Watertown 88, Herkimer 81, Hudson 80, and others with lower figures, tapering down to 14 and even 11 per cent.

ACUTE ANTERIOR POLIOMYELITIS

A Manifestation of Acute Tissue Anoxia

WALTER F. DUGGAN, M.D., Utica, New York

THE disease known as acute anterior poliomyelitis is sufficiently well known to make unnecessary a detailed résumé of the signs, symptoms, or differential diagnosis.

Essentially, it is a disease involving the lower motor neuron in the cord, medulla, or midbrain. Other parts of the nervous system may be, and often are, involved. It ends in a flaccid paralysis as a result of atrophy of the anterior horn cells. The spinal fluid is clear or slightly hazy, and a fibrin web may form. Cells are increased, the count ranging from 15 to 1,000, mostly lymphocytes. The fluid is negative by smear and culture for bacteria. The albumin and globulin are increased, and the sugar is normal or high. A filtrable virus is considered to be the etiologic agent. The disease is most prevalent during the warm months and is essentially a disease of the country rather than of the city. Contacts are not so likely to contract the disease as they are in many acute infectious diseases. There are many mild or abortive cases, and the condition attains epidemic proportions every few years.

The encephalomyelitis following the acute exanthems may produce a picture somewhat resembling poliomyelitis except that these cases have both motor and sensory changes and also usually clear with little or no residual paralysis.

There is also a large group of cases known as optic encephalomyelitis (or neuromyelitis optica) in which, in addition to motor and sensory changes, there is also an optic or retrobulbar neuritis which may be the first sign of the disease. These cases have a relatively high mortality, and, unlike poliomyelitis, they occur in an older age group. For this group a filtrable virus has been suggested as the etiologic agent.

Finally, we have the cases of acute

retrobulbar neuritis which occur usually between the ages of 12 and 35, though I have seen 1 case in a woman of 75. Many of these cases are associated with multiple sclerosis. Most of these cases occur with devastating suddenness, so that the patients either go almost completely blind in a few hours (in one or both eyes) or they discover the visual loss on awakening. With the time-honored methods of treatment or no treatment at all, most of these cases recover some vision over a period of from three weeks to several months. A small number recover normal vision.

Based on the assumption that an arteriolar spasm is the primary pathology in these cases, with an accompanying capillary dilatation and increased permeability, I have treated these latter cases with only intravenous injections of sodium nitrite for the past seven years. Twenty-five out of twenty-nine attacks were markedly improved (unpublished report) and 1 patient, who had four separate attacks, still has normal vision in both eyes.

Many of these cases occur during the summer months, and some writers have predicated a virus as the cause of the disease. Cases in which the optic nerve is involved do well with vasodilator treatment even after many weeks or even months of diminished vision, because nerve fibers can be exposed to anoxia for relatively long periods of time without dying. Demyelination occurs, however.

In poliomyelitis, on the other hand, it is nerve cells which suffer from anoxia. These cells cannot withstand anoxia for many minutes without dying. I think it is more than a mere coincidence that the pathology of acute poliomyelitis is one of venous stasis, capillary stasis, and capillary paralysis, with transudation of

plasma, white cells, and red cells into the anterior horns. The gross picture is that of congestion and hyperemia. This same pathology is found in acute retrobulbar neuritis, encephalomyelitis, acute choroiditis, and other conditions. The picture varies quantitatively, not qualitatively, from tissue to tissue.

Encephalomyelitis and acute retrobulbar neuritis are known as demyelinating diseases, while polyomyelitis is classed alone. It should be apparent that in the white matter of the cord or brain this demyelination is the most obvious pathologic change only because the myelin makes up the bulk of the tissue. Demyelination always occurs around a blood vessel, and, like the parenchymal tissue in any organ, the myelin-containing cells are most sensitive to oxygen lack. The final result is a glial scar, usually with a narrowed or obliterated blood vessel in its center. Until now the assumption has been that the glial tissue just proliferated and compressed the blood vessel. It is apparent that here cause and effect have been mixed up in the past.

In polyomyelitis, on the other hand, where there is little myelin and nerve and glial cells make up the bulk of the tissue, demyelination is not marked in the healed lesion, but the contracted or obliterated vessels, the atrophic nerve cells, the glial scars, and the fibrosis are visible. Fundamentally, however, the healed lesions of polyomyelitis and of retrobulbar neuritis (or even multiple sclerosis) are comparable, the differences being quantitative rather than qualitative and depending in part on the anatomy of the involved tissue.

I believe the same basic pathology is present in all these diseases, and the same basic etiology may account for this pathology. Mills¹ has described polyomyelitis as a *vascular catastrophe*.

The only ophthalmologic condition comparable in many ways to polyomyelitis is an acute spastic closure of the central retinal artery or one of its branches (usually known as embolism of the central retinal artery). Here, with dramatic suddenness, there is complete loss of

sight in that part of the field corresponding to the area of the retina normally supplied by the nonfunctioning artery. In addition to the spastic artery there is an intense edema of the retina, the veins are usually engorged (venous stasis), and there are sometimes small hemorrhages. With immediate vasodilator treatment function may be restored, if it is delayed even for a day, function is often lost, even if the circulation is restored to normal. This is because the ganglion cells, which are supplied by the retinal arteries, cannot withstand oxygen lack for a long time. In cases seen and treated early or in cases in which the closure is not complete, it is possible to obtain a return of function. While this is a sensory paralysis, yet, it is a paralysis due to anoxia of nerve cells just as polyomyelitis is. Because of this I think the analogy is reasonable.

Gerni² thinks that many cases of strabismus occurring in early childhood are due to abortive attacks of polyomyelitis. This is a plausible hypothesis.

Recently I saw a girl, aged 13, who had loss of sight in the left eye for nine days. The vision was 10/200. There was a paracentral scotoma and a defect in the lower half of the lower field. These defects were separate and distinct. There was a closure of the upper branch of the retinal artery with edema above the macula and a cherry-red spot at the macula. The patient had two lesions: an acute retrobulbar neuritis which caused the paracentral scotoma and a visible closure of the upper branch of the central retinal artery which caused the defect in the lower field. With daily intravenous injections of 100 mg of sodium nitrite the retinal artery closure and the defect in the lower field disappeared on the fifth day, the paracentral scotoma decreased markedly in size, and the vision improved to 20/50. On the *ninth* day the vision was 20/20 and the scotoma was very much smaller. Ten days later the scotoma was gone. All examinations (medical, neurologic, rhinologic, roentgenologic, and laboratory) were negative.

This case demonstrates the coexistence of closure of the retinal artery (diagnosed

by the ophthalmoscopic examination) and closure of an arteriole in the optic nerve (as demonstrated by improvement of the condition with vasodilator therapy) The pathology and pathologic physiology was identical in the two conditions

The case to be described illustrates the coexistence of an acute retrobulbar neuritis and an acute anterior poliomyelitis in the same patient Mild vasodilator therapy seemed to help both conditions This case was reported by Much and Hüppi *

Case Report

The patient, a woman aged 37, had headache and a chilly sensation on June 14. The next day vision began to decrease and was reduced to perception of light on the following day

June 17—The vision was unchanged, pupils were mid-dilated and nonreactive to light, nerve heads were hyperemic, and eye movements were painful and limited in all directions

June 18—Temperature was 39.1 C The patient complained of pain in the head and was moving actively in bed—pulse, 80-90, blood pressure, 125/85, and urine, negative except for a few red and white cells Examination of the blood revealed a hemoglobin of 54 per cent, erythrocytes, 4,780,000, leukocytes, 6,360 with 52 per cent lymphocytes Neurologic examination was negative except for a stiff neck

June 19—The patient had a positive Kernig Lumbar puncture gave a clear fluid with 88 cells per cubic millimeter, and the Pandy test was positive Culture of the fluid gave no growth

June 20—Both legs were paretic

June 21—Both legs were completely paralyzed with loss of all reflexes There was urinary retention and constipation, and vision was 3/200 in each eye The diagnosis of acute anterior poliomyelitis was first made on this date Among various treatments, diathermy to the back was started

June 24—The patient moved her knees actively up to 90 degrees and moved her toes normally She could not lift her legs off the bed

June 30—The patient lifted her feet 20 cm off the bed No reflexes could be elicited The optic disks were still blurred Massage and active movement were started

July 8—The vision varied between 6/200 and 9/200 in each eye.

July 15—The patient walked the length of the room three times

July 27—The vision was 20/50 in the right eye and 20/40 in the left eye There was a central scotoma in each eye The disks were a little indistinct with definite pallor of the right disk, and the retinal arteries were constricted The pupils reacted better to accommodation than to light, and there was a definite paresis of accommodation

August 1—Daily inhalations of amyl nitrite were started

August 17—The vision was 20/30 in the right eye and 20/22 in the left eye. The patient walked 500 M

August 19—Deep reflexes returned in the legs

The amyl nitrite inhalations were stopped in October In November the vision was 20/20 in each eye, the patient could walk continuously for three hours, the gait was normal, and the reflexes were normal

In this case, a severe optic neuritis and a "cold" were the first manifestations of the disease Four to five days later (after the loss of vision) there was a complete lower motor neuron paralysis of both lower extremities As there was no involvement of the trunk or upper extremities the condition was not due to a spreading infection Much and Hüppi predicate an infectious virus as the cause Diathermy (which is supposed to act by causing vasodilatation) seemed to cure the paralysis, while inhalations of amyl nitrite (a known vasodilator which has been used a great deal in ophthalmology for vasospastic conditions) seemed to aid in the final restoration of vision The patient's ability to walk also improved while receiving this vasodilator

Treatment

It is obvious that if poliomyelitis is due to tissue anoxia any treatment to be effective must be started in the preparalytic or early paralytic stages Most of the treatment used to date during the acute stage is essentially of a negative type—rest in bed and support to the affected limbs Since carbon dioxide, which is produced in the muscles by exercise, has a tonic effect upon circulation dilating the arterioles and also dilating the capillaries without increasing their permeability in the presence of sufficient oxygen, it may be that even this time-honored regimen

does more harm than good. In fact, Mills treated 35 cases with hydrotherapy and passive movement during the irritative stage. None of these cases developed any residual deformity.

Retan's⁴ method of injecting large quantities of 0.375 per cent salt solution intravenously, with removal of spinal fluid at stated intervals, is the latest method of treatment. It is supposed to act by washing out hypothetic toxins.

Treatment with convalescent serum is apparently ineffective and so is prophylactic vaccination with emulsified spinal cords. This is probably due to the debatable conception that the disease is akin to a bacterial infection. In my opinion the causative toxin, poison, or virus is formed by the patient's own cells. Infections of the upper part of the respiratory tract, climatic conditions, and other factors are probably of etiologic significance, and there is probably more than one factor operative in most cases.

A Plausible Theory of the Cause of Poliomyelitis with a Therapeutic Procedure Based on This Theory

Poliomyelitis is, pathologically and physiologically, analogous to acute retrobulbar neuritis, acute choroiditis, encephalomyelitis optica, the encephalitis following the exanthems, acute closure of the central retinal artery, and acute allergy to cold. Most of the above conditions (except the last two) are usually preceded by an acute infection of the upper part of the respiratory tract, a "head cold," or a sinusitis. So-called cases of acute poliomyelitis without paralysis may have only a catarrhal infection of the upper part of the respiratory tract with characteristic spinal fluid changes. "Polio" has a definite age incidence as do all the other diseases mentioned above. All of these conditions are characterized by *tissue anoxia*, and the clinical symptoms and signs depend on the type of tissue involved. The "polio" cases often occur in summer. Cold weather can be ruled out, but bathing in cold water and a mild alkalosis due to hyperpnea cannot be ruled out. Prob-

ably there is more than one factor involved in the causation of "polio." Rivers has said that if the condition is due to a filtrable virus all cases occurring in an epidemic of paralysis may not be caused by the same virus, and different viruses may be operative in different epidemics.

Head colds are common, the above-mentioned diseases are uncommon. Therefore, the cases developing these diseases must have an abnormal arteriolar-capillary sensitivity to a humoral agent. Variation in the age incidence for different diseases would indicate that different arteriolar-capillary units are abnormally sensitive to this humoral agent (toxin? virus?) at different age periods.

1 Cold water or cold winds can cause a transitory paralysis. Horton, Brown, and Roth⁵ have demonstrated that histamine is the cause of this abnormal reaction to cold. The reactions following exposure to cold usually clear up rapidly because histamine is a simple chemical substance easily destroyed by oxygen or by histaminase in the presence of oxygen.

2 Zinsser⁶ states "It should be remembered, moreover, by those studying bacterial poisons that a number of bacteria (coli, influenza, etc.) may produce substances either identical with or closely related to histamin, and tyramin, on peptone media, after five or more days of growth."

3 Valy Menkin⁷ states that Krogh and Lewis think that under certain stimuli the tissue cells will liberate substances having a dilator effect on capillaries. "Krogh postulates the possibility of two effective substances liberated from injured cells: a diffusible factor closely related to histamine if not histamine itself, and an H-colloid substance which is probably less diffusible."

4 Dale and Laidlaw and Dale and Richards⁸ have shown that in the cat histamine causes arteriolar constriction and capillary dilatation.

5 Histamine is one of the most potent chemical substances known. Majala⁹ reported a case in which the patient, a man of 32 with syphilitic aortitis, died

one-half hour after receiving 0.8 mg of histamine subcutaneously. Here the blood vessels to the heart were obviously sensitive to histamine.

6 Pickering and Hess¹⁰ have reported that 0.1 mg of histamine phosphate, intravenously, in man causes marked physiologic reactions (flushing of face, fall in blood pressure, rise in cerebrospinal fluid pressure, and headache). *Amyl nitrite* abolishes the headache.

7 Poliomyelitis is considered by some to be an allergic disease. Intravenous injections of histamine produce symptoms almost indistinguishable from anaphylactic shock, and the pathologic picture of the two conditions is almost identical (Seegal¹¹ and Moon¹²).

8 Finally, Topley¹³ states that the most dramatic features of anaphylactic shock are the result not of the antigen-antibody reaction itself but of the liberation of histamine by the injured cells *and the secondary response of the histamine-sensitive cells throughout the body*.

The above eight points seem to show that a histamine-like body may be responsible for acute poliomyelitis, that only minimal amounts are necessary in the presence of abnormally sensitive arterioles and capillaries, that histamine or H-colloid may be the responsible factor in anaphylaxis, and (since allergy and anaphylaxis differ quantitatively rather than qualitatively) that this fact explains poliomyelitis if we assume it is one manifestation of acute allergy.

Moon¹² states that in the case of a dog given histamine phosphate subcutaneously, twice daily, in increasing doses (7.5–150 mg), the dog died on the ninth day. The lungs showed intense congestion, marked edema, and capillary hemorrhages. This is the essential pathologic picture in the spinal cord in acute anterior poliomyelitis.

As stated before, histamine causes arteriolar constriction and capillary dilatation, capillary permeability is increased so that plasma, white cells, and finally red cells pass out into the tissues. Dale, Laidlaw, and Richards (quoted by Moon) commented on the diffuse dusky

congestion of the viscera and the stasis of blood in the capillaries in animals killed with histamine, intravenously.

Oxygen lack has this same effect on capillaries (Landis). It is apparent that histamine, by causing arteriolar constriction, can prevent oxygen (as oxyhemoglobin) from getting to the tissues in adequate amounts. The capillary dilatation will lead to stasis. The capillaries, therefore, suffer both from histamine and from oxygen lack, and, since the histamine is trapped in the tissues, a vicious circle is set up tending to perpetuate the condition once it is definitely started. Furthermore, this histamine or histamine-like body may slowly diffuse through the tissues to nearby venules where it enters the circulation and is then carried to other parts of the body, setting up a similar condition elsewhere depending on histamine-sensitive cells in other regions.

Moreover, in contrast to histamine, whose most marked effects are on the capillaries but which also acts on the arterioles, there is the well-known fact that adrenalin, which acts particularly on the arterioles, if given in large doses produces a condition of circulatory failure indistinguishable from shock (Moon). This is due to maximal arteriolar constriction of such degree that the tissues suffer from anoxia. Whipple, Erlanger, and others have confirmed this point. There is atony of the capillaries and venules, with transudation of plasma, etc. Moreover, a condition of stasis in capillary areas tends to become irreversible when it has persisted for a short time (sometimes fifteen minutes).

As stated before, one theory of allergy (and anaphylaxis) is that the condition is due to the liberation of histamine-like bodies resulting from the antigen-antibody union. Anaphylactic signs and symptoms differ from animal to animal but *are relatively constant for any one animal whatever the antigen is that is used*. Animals react to histamine much as they do to anaphylactic shock.

Histamine acts at once, in anaphylaxis seven to fourteen days must elapse after

the sensitizing dose of antigen before the animal can be shocked. Second injections of histamine are as effective as the first injection. After anaphylactic shock the animal is insensitive to a second shocking dose of antigen, because, presumably, the precursor of the histamine-like body requires time to be formed, indicating that this hypothetical anaphylactotoxin is a product of the body cells.

In my experience a number of conditions that have the same fundamental pathologic picture as acute anterior poliomyelitis have responded dramatically to treatment directed toward the arteriolar spasm.

If we can get oxygen to these tissues the permeability of the capillaries is decreased, the tissues receive oxygen, the edema and cellular elements are absorbed, and function returns to normal. The speed of recovery is inversely proportional to the length of time symptoms or signs have existed prior to the onset of treatment.

All the conditions I have treated have been ascribed to head colds, a virus disease, toxemia, etc. In all cases the reaction and response to vasodilator therapy has been better than the time-honored methods in vogue.

Sodium nitrite intravenously has been found to be the most effective arteriolar dilator, though acetylcholine, amyl nitrite, and erythrol tetranitrate are not without merit. By giving the drug intravenously, there is present at one time a relatively large amount (100 mg) of the drug in the circulating blood. Definite improvement usually begins on the third to fifth day. It is likely that during this first three to five days the capillaries slowly regain their tone, their permeability is decreased, the perivascular edema fluid and extravasated cells are absorbed, and then an improvement in function becomes manifest.

Conclusions

1 The pathologic and clinical evidence indicates that poliomyelitis may be due to a histamine-like body, that this body is a product of the body's own cells,

and that it may be produced by cold or as a result of antigen-antibody combination secondary to an infection of the upper part of the respiratory tract. Allergy rather than immunity results.

2 Patients who develop acute anterior poliomyelitis have an abnormally increased sensitivity of the arterioles and/or capillaries of the anterior horns to this histamine-like body so that the pathologic picture previously described results. Wherever this pathology develops, loss of function results, whether it be in the spinal cord, choroid, retina, or optic nerve. The symptoms and signs of this pathologic picture depend only upon the anatomy of the part involved.

3 Many of the diseases showing this typical pathology have definite and different age incidences. We think that between the ages of 1 and 12 the anterior horn arterioles, in a few individuals, are hypersensitive to this virus or toxin which acts like histamine. Moreover, the incidence of second attacks of poliomyelitis is such that it seems reasonable to assume that an attack of poliomyelitis does not confer immunity, as pointed out by Fischer and Stillerman¹⁴. The same is true of acute retrobulbar neuritis, acute choroiditis, etc. Second attacks are more frequent in these cases than first attacks are in the general population. This lack of immunity would indicate that the hypersensitivity of the arteriolar-capillary unit is of major importance and that the virus (?) or toxin (?) is of secondary importance.

4 Until now, the attention of research workers has been directed toward the immunologic features and the virus origin of acute poliomyelitis. Much work has been done on the existence of antibodies and their identification. Complicated experiments have been devised for isolating and identifying the virus, and the epidemiologic features of the disease have been thoroughly studied. The treatment by surgery and physical therapy of the sequelae of the disease is standardized and is as efficient as could be desired. Attempts have been made to block off the olfactory bulbs with zinc sulfate.

Much work has been done on the pathology of the olfactory bulbs. If any changes are regularly present in the bulbs, they can be explained by the fact that in poliomyelitis, while the major pathology is found in the anterior horns, other parts of the nervous system are also affected.

5 Injections of emulsified spinal cord and/or brain are given to animals to prove the presence of the virus. If this virus (?) is a histamine-colloid compound, it is obvious that in a certain number of animals one could get a picture resembling poliomyelitis. However, it has been shown by many workers that products of hydrolytic cleavage of protein, filtrates of bacterial growth, products of disintegrating tissue, and watery extracts of brain, muscle, kidney, liver—in fact of nearly every organ in the body—produce shock and the pathologic picture described above by a histamine-like effect (Moon¹²). *This pathologic picture is similar to that of poliomyelitis.*

6 The virus (?) of poliomyelitis is supposed to enter the body through the nasal mucosa. The chief pathology is usually in the lumbosacral cord. Direct extension of an infectious process does not explain this fact. The assumption of the formation of a histamine-like body (or virus?) in one part of the body and its transfer via the blood stream to another part of the body does explain this seeming contradiction. To complete the hypothesis we must assume that the arteriolar-capillary units are hypersensitive to this humoral agent. If these hypersensitive units are in the nervous system, we call our agent neurotrophic. If the units are in the skin, we speak of a dermatrophic virus, agent, or toxin. These neurotrophic and dermatrophic reactions overlap as in the exanthems, where the skin eruption is a constant finding and central nervous system complications relatively uncommon, and in the well-known interrelationship between herpes, chickenpox, and encephalitis. Many similar analogies can be adduced.

7 Contributory factors probably include bathing in cold water and chilling,

with the formation of histamine in the skin, overexertion with overbreathing so that carbon dioxide is blown off and an alkalosis due to primary carbonic acid deficit results, with a decrease in the ability of oxyhemoglobin to dissociate so that it retains its oxygen instead of giving it up easily in the tissues (and, in poliomyelitis, the nervous tissue produces much less carbon dioxide than the muscles, for example), fatigue, dehydration, focal infection, etc. Probably several factors are contributory to an attack.

8 As Moon¹² has stated "If all agents which produce relaxation and permeability of capillaries shall be regarded as toxins, then the conception of toxemia is substantiated. However, that definition would include normal metabolites, cytoplasmic substances, and lack of oxygen as toxins. Capillary atony produces clinical manifestations usually ascribed to 'intoxication'. So far as the actual mechanism is concerned, many phenomena called toxic are essentially anoxic."

9 Sometime after this conception of the cause of the pathology of and a rational therapy for acute anterior poliomyelitis was formulated, Mr E Poulton,¹⁶ of England, stated that he wished to treat several cases of poliomyelitis in an oxygen chamber because he believes that the disease is due to local tissue anoxia. However, the hemoglobin of the blood is normally 96 per cent saturated at sea level. Breathing of pure oxygen would add only about 17 volumes per cent to the normal content of from 15 to 18 volumes per cent already present. The difficulty is not with the supply of oxygen available in the blood but rather with the inability of the blood to get into the areas of stagnation because we are dealing with a histotoxic type of anoxia. It would be more rational physiology to give carbon dioxide than to give oxygen where the hemoglobin content of the blood is normal.

10 Inasmuch as many conditions (acute retrobulbar neuritis, acute choroiditis, acute closure of the retinal artery, etc.) have responded rapidly to intensive

vasodilator therapy and inasmuch as the pathology of these conditions is basically the same as that of acute anterior poliomyelitis (arterior spasm, perivascular infiltration of lymphocytes, capillary and venous dilatation, with stasis of blood and leakage of plasma, white cells, and sometimes red cells), it is only reasonable to predict that similar therapy directed toward the arteriolar spasm should prove equally beneficial in poliomyelitis if given early in the disease. It must be given early because nerve cells, unlike nerve fibers, cannot withstand oxygen lack for any great period of time without dying.

The treatment is safe—I have seen only two mild reactions in over 3,000 injections given to individuals between the ages of 10 and 84.

11 It follows as a corollary that the various nervous system complications of the acute exanthems (such as encephalitis, polioencephalitis, poliomyelitis, myelitis, optic neuritis, etc.) should also respond favorably to this treatment.

12 A second corollary is that vasodi-

lators (sodium nitrite or erythrol tetranitrate) by mouth could be used for prophylaxis during epidemics of "polio," and single injections of sodium nitrite could be given to individuals in the pre-paralytic or prodromal stage of the disease or in contacts.

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DISCUSSION (ABSTRACT)

Symposium on Sterility, papers of Drs. Collins and Miller, Dr. Burns and Dr. Thomas.

Dr. Robert E. Seibels, Columbia, S. C.—I became from the beginning rather conservative in surgical practice, probably due to an incident that happened quite early in my career. I was sitting in the office, waiting and hoping that a patient would come in. A very large and prosperous colored woman came in, starched skirts, apron and all. You could sort of see the fibroid, don't you know? There was at least \$10. She sat down and I said "What can I do for you Auntie?"

"Is you the Doctor?"

"Oh, yes."

"Is you a surgical doctor or a medical doctor?"

"I am a surgical doctor, a very experienced surgeon. I have had lots of experience. I am one of the best surgeons you ever heard of."

"Do you cut people with a sharp knife?"

"Oh, yes, we use a knife very successfully."

"Well, great God, you ain't the doctor I'm looking for."

So my lack of conservatism cost me my entire private practice, and I think that was a valuable lesson.—*Southern Med. Journal*

THE SOFT-SOAP HAZARD

Beware of the days when all goes well, beware of the word of praise and the pat on the back, for all such things are fickle. But when Old Man Adversity knocks at your door, do not try to holler loud enough to drown the sound of his knocking. Ask the old croaker to come in and justify his visit. Be candid with him, strip him of his cloak of mystery, and find the purpose of his visit. From him you may learn much, but he is a peculiar sort of fellow in that the more you learn from him the less often he knocks at your door and the happier are your days.—*Jour. Med. Soc. N. J.*

WHERE THE DOLLAR GOES

Of every dollar collected by the average American physician from his patients, 40 cents is paid out in the form of rent, secretarial salaries, automobile upkeep, drugs, supplies, equipment, and other professional expenses, according to reports received from 7,707 physicians by *Medical Economics*.

The actual amount spent for professional expenses averages \$2,963 per physician per year (Annual gross income averages \$7,365). As a result of these substantial expenditures, the average private physician has an accumulated investment in professional equipment of \$3,231.

Case Reports

HYPERPARATHYROIDISM

Report of a Case of *Osteitis Fibrosa Cystica*, with a Pathologic Fracture and Renal Calculi Cured by Removal of the Parathyroid Adenoma

IRWIN E. SIRIS, M.D., New York City

THE concept that the secretory hyperactivity of a parathyroid adenoma or of a hyperplastic parathyroid gland will bring about skeletal and renal manifestations because of an alteration in the calcium, phosphorus, and phosphatase metabolism, which disturbance is arrested or cured by the removal of the parathyroid adenoma, has been evolved as a result of facts contributed by many observers. The scientific basis for the role assumed by the activity of the parathyroid gland has been provided as a result of accumulated facts and observations which date back to 1877 when Ivar Sandstrom¹ first directed attention to the anatomy of the parathyroid gland. In 1891 Von Recklinghausen² described the entity frequently referred to by his name, i.e., *osteitis fibrosa cystica*. Welsh, in 1898, described the morphologic findings in the normal parathyroid gland and since this time nothing has been added, according to Castleman and Mallory.³ Welsh⁴ recognized the oxyphil cell, which he distinguished from the principal or chief cell, and he believed that the least specialized was the water-clear or wasserhelle cell, which, as it became more specialized, reached the stage of the chief cell. In 1904 Askanazy⁵ associated parathyroid adenomas with the abnormal skeletal changes in *osteitis fibrosa cystica*. In 1905 MacCallum⁶ associated a case of chronic glomerulonephritis as a manifestation of the activity of a parathyroid adenoma. The clinical relationship between the increased activity caused by an adenoma of the parathyroid and skeletal changes in *osteitis fibrosa cystica* was first established in 1925 when Mandl⁷ reported a striking cure for the syndrome of hyperparathyroidism from the removal of a parathyroid adenoma. Similar cases have since been reported with striking recession of the osteolytic processes following the removal of parathyroid adenomas. Barr and Bulger,⁸ in 1930,

emphasized the metabolic studies and skeletal changes in the clinical syndrome of hyperparathyroidism. Castleman and Mallory,³ in 1935, found in 115 routine autopsies that the four parathyroid glands were in their normal position, and only in rare instances did they find supernumerary and aberrant glands in the thymus, thyroid, or in the region of the anterior mediastinum. They reported them embedded in fat tissue, from which they distinguished them by their color, which varied from dark reddish brown to light tan. They recognized four major cell types and admitted the existence of transitional types. In 90 per cent of the single tumors the chief cell with its transitional forms predominated, and the chief cell was the only invariable component of a tumor. They believed "that the fundamental line of division in the pathology of hyperparathyroidism lies between diffuse hyperplasia of all the parathyroid tissue and localized proliferation of only a portion, the remaining glandular tissue being histologically normal."

Albright, Baird, Cope, and Bloomberg⁹ have demonstrated renal calculi in the presence of parathyroid adenomas or hyperplasia with or without decalcification of the skeletal structures due to the increased excretion of calcium and phosphorus in the urine. They have observed that urinary calculi very often have been the presenting clinical manifestation of the disease. They contend that the result of the action of the parathyroid hormone is to increase the excretion of the phosphorus and calcium in the urine and a reciprocal elevation of the calcium level together with a lowering of the phosphorus in the serum. Albright, Sulkowitch, and Bloomberg¹⁰ are of the opinion that the hormone does not act directly on bone tissue but rather on the phosphorus and calcium equilibria in body fluids. Renal impairment and complications of renal calculi were considered the real

hazard in Churchill and Cope's¹¹ series, as 3 of their patients died from renal complications of hyperparathyroidism, and they observed that renal complications may be present, without bone disease, demonstrable by roentgenography

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non, Shorr, McClellan, and DuBois¹² and those emanating from the group at Massachusetts General Hospital indicate that the disturbance in calcium and phosphorous metabolism is characteristic of parathyroid disease when there is evidence of an increase of calcium, a lowered phosphorous level, and an increase of phosphatase in the serum. These laboratory findings warrant a thorough exploration for and the extirpation of the adenoma, the removal of which should result in the arrest of the calcium and phosphorous deposition in the kidneys and the arrest of the osteolytic changes in the bones. With the extirpation of the tumor the normal physiologic hormone activity is restored, and calcium deposition in the bone is resumed. The calcium, which has been reported to have returned to normal in a few hours after an operation, remains within a constant blood serum level of 9.5 and 11 mg. per hundred cubic centimeters, but the phosphorus may be slow to approach 3 to 3.5 mg. per hundred cubic centimeters. In the case reported herein the phosphatase remained slightly elevated one year and two years and eight months after the operation, which suggested the possibility of another adenoma or hyperplasia. However, the clinical and roentgenographic evidence indicated indisputably that the disease had been arrested and that the patient was being cured.

To the excessive parathyroid hormone activity is attributed the impairment of the ability of the bones to retain calcium and phosphorus, and there results a depletion of the mineral reserves with a local or general decalcification of the skeletal structure. These areas of rarefaction, some of which are sharply demarcated, are diffusely scattered and vary in size and shape from a mild osteoporosis, which may not be detected radiographically, to large and extensive processes. The cortex is frequently thinned out and blown, while the decalcified areas may be trabeculated and cystic, particularly in the pelvic bones. The softening

of the supporting framework may result in pathologic fractures and deformities. The skull may reveal a moth-eaten, mottled, or finely granular appearance. The jawbones may become so decalcified that they fail to support the teeth, which fact probably accounted for our patient having had all her teeth extracted within a year before she sustained her injury.

Attention has been called by Albright, Aub, and Bauer¹³ and Churchill and Cope¹¹ to the difficulty in finding the tumor in the parathyroid. They cite the aberrant situation of the adenoma in crevices between the esophagus and the trachea or in the posterior or anterior mediastinum, and they say that the adenoma must be differentiated from a lymph node, a collection of fetal fat, or a thyroid lobe.

The circumstances concerning the clinical history and radiographic and metabolic changes before and after operation in the case I am reporting are of such extraordinary interest and significance that I am reporting them in detail.

Case Report

A colored woman, aged 32, married, was admitted on June 21, 1937, to the Beth Moses Hospital, with a history that she fell the night before admission and injured her right elbow. Immediately after the accident she experienced a sense of numbness over her entire elbow extending to her hand. The numbness was soon followed by pain which became aggravated on motion. The elbow became tremendously swollen. After a restless night she came to the hospital.

There was apparently no history of bone disease in any member of her family (her mother, four brothers, and sisters were alive and well). No history of any serious previous illness was elicited from the patient. Her menses had begun at 14, occurred every four weeks, and lasted four days without any discomfort. She had had five children of whom three were living and well, one had died immediately after birth, cause unknown, and one was a stillbirth.

For several months the patient had been complaining of "rheumatic" pains in both hips and left forearm on the inner side of which she observed a swelling. Her husband noticed a general listlessness and sluggishness. Her appetite had always been good, although she had had some trouble with her teeth. About a year before, she was advised to have all her teeth removed because of pyorrhea. Half of them were removed in November, 1936, and the other half in January, 1937. She was very constipated and for the past five years had been taking physics almost every day. She had had hemorrhoids for the past ten years and often had seen frank blood in her stool. This she attributed to the fact that she was constipated and had to use cathartics. For several months she had ob-

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FIG 1 Irregular oblique fracture of the lower end of the humerus through a circumscribed area of rarefaction which has a faintly demarcated multilocular cellular stroma. The cortex is thinned out laterally and in certain places has broken through.

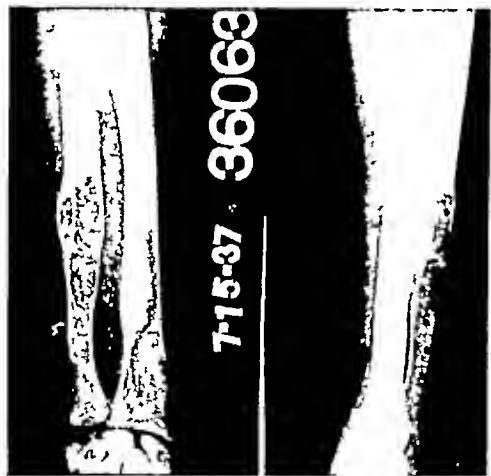


FIG 2 Marked decalcification and rarefaction of the ulna with thinning of the cortex.

served that it was necessary for her to urinate at least twice after she retired for the night. But this was never accompanied by any dysuria or hematuria. For many months she had complained of severe headaches but these, also, she attributed to the fact that she was constipated. The headaches would last three to four weeks at a time and were very distressing.

On examination, the woman was found well preserved without any clinical evidence of syphilis or tuberculosis. The upper and lower teeth had been replaced by false teeth. In the neck there was a small nodular mass, approximately one-half to three-quarters of an inch in size, intimately attached behind the upper portion of the left lobe of the thyroid gland and extending slightly outward at about the level of the third tracheal ring. The right elbow and fore-



FIG 3 Generalized decalcification, thinning, and blowing of the cortex. The inner table tends to become more atrophied and ill-defined, the demarcation between the inner and outer table is lost, the posterior clinoid of the sella turcica and dorsum sella are atrophied and moth-eaten. Similar areas of rarefaction are present in the mandible.

arm were markedly swollen, tender, and very painful on motion which was limited. There was a slight swelling of the inner aspect of the middle of the left forearm and an apparent disturbance in the normal bony contour of the ulna. The systolic pressure was 160 and the diastolic 110.

Radiographic examinations (interpreted by Dr. Louis Held, attending radiologist) gave the following findings. The right elbow reveals an irregular oblique fracture through the lower end of the humerus which is occupied by a rather generous sized area of fairly well-circumscribed rarefaction, the center of which is occupied by a faintly demarcated multilocularly arranged cellular stroma. This area is on the lateral aspect of the lower humerus and has a thinned-out cortex and in certain places has broken through, suggesting a blowing-out of the cortex. The distal fragments are displaced appreciably inward and to a lesser degree anteriorly. The articular surface of the humerus appears intact (Fig. 1). Radiographic examination of the long bones, skull, pelvis, and ribs reveals the presence of a marked general decalcification throughout the skeletal structure (Figs. 2 and 3). Diffusely scattered areas of rarefaction ranging from 1 cm in diameter in the skull to 6 cm in diameter in the femora are observed. These areas show in a uniform way the following salient characteristics. They have a tendency to be elliptical. While those areas show a tendency to definite demarcation from the surrounding bone structure, they show no definite line of bone condensation. There is no consistent reaction in the immediately adjacent bones except in the upper shaft of the humerus. There tends to be multiloculation in the form of concentric over-

TABLE 1—CHANGES IN BLOOD SERUM VALUES BEFORE AND FOLLOWING OPERATION

		Preoperative		Postoperative				
		June- July 1937	July 18 1937	July 20 1937	Nov. 1937	May 1938	April, 1939	April 1940
Normal Values								
Calcium	9- 11 mg per 100 cc. of serum	16.8	O P	10.8	8.8	13	12.7	11.4
Phosphorus	3- 4 mg per 100 cc. of serum	2.1	E R	2	2.6	2.07	1.9	1.5
Phosphatase	6- 10 units (King Armstrong)	26	A T	30.7	14.5	8	12	7.5
Sugar	70-120 mg per 100 cc. of serum	75	I O	80	130	75	100	
Urea nitrogen	10- 20 mg per 100 cc. of serum	10	N	11	8	7.5	13	
Cholesterol	150-250 mg per 100 cc. of serum	140		140		125		130
Cholesterol ester	65- 75 per cent of total	58		68		45		75
Percentage		41		49		38		58

lapping bone rings. There is definite thinning and sometimes blowing of the cortex. Although the involved areas lie essentially concentric in the long axis of the bones, in the majority of instances the lesions appear to encroach upon the medulla to a great extent. In the skull the inner table tends to become markedly atrophied and ill-defined, the demarcation between the inner and outer table is lost, the posterior clinoid of the sella turcica and dorsum sellae are atrophied and moth eaten. The frontal sinuses are huge, scattered throughout the vault are noted varying areas of rarefaction described above. Similar changes of a coarse nature are noted in the mandible.

Radiographic examination of the kidneys revealed them to be normal in size, shape, position, and illumination, except for numerous shadows (about eight) closely in position, pinhead sized calcific deposits in the region of the renal pelvis and calices in the right and about four similar shadows in the left renal pelvis. The pelvic flares show a sharply defined, calcified, slightly thinned out stroma together with a general broad porosity (Fig 4).

Examination of her urine showed a specific gravity of 1.010, and no abnormal findings. Bence-Jones proteins were not found. The phenolsulphophthalein report in the first hour was 15 per cent in the first specimen of 350 cc. of urine with a specific gravity of 1.008. In the second specimen with 170 cc. of urine the specific gravity was 1.004 with a phenolsulphophthalein of 10 per cent—a total of 25 per cent. The urea clearance test was reported as 150 per cent of average normal. There was a question whether or not the bladder had been emptied with the first specimen, which contained 286 cc. of urine as compared with the second specimen of 78 cc. The Mosenthal test showed evidence of impairment of the concentrated ability of the kidneys.

The examination of the blood showed a red cell count of 4,760,000, 72 per cent hemoglobin, and a normal white cell count. Her Wassermann, Rosenthal, and Kahn were reported as negative. The glucose tolerance test was normal. The serum calcium was reported as 16.8 mg per hundred cubic centimeters of serum, the phosphorus, 2.1 mg per hundred cubic centimeters, phosphatase, 26 units by the King-Armstrong method. The sugar was 75 mg per hundred cubic centimeters, the urea nitrogen, 10 mg per hundred cubic centimeters of serum, the cholesterol, 140 mg per hundred cubic



FIG 4 Kidneys normal in size, shape, position, and illumination, except for numerous (about eight) closely positioned pinhead-sized calcific deposits in the region of the renal pelvis and calices in the right and about four similar shadows in the left renal pelvis. The pelvic flares show a general broad porosity and rarefaction.

centimeters of serum, the ester, 58 per cent of total with a percentage of 41 per cent. With repeated examinations of the serum during the months of June and July prior to the operation, calcium, phosphorus, and phosphatase were reported within approximately the same figures (Table 1). The spinal fluid examination after withdrawal of 20 cc under a moderately increased pressure revealed sugar 60, albumin 1+, globulin negative, Kahn test negative, and the colloidal gold normal.

An attempt was made to reduce the displaced humeral fragments under an ether anes-



FIG 5 Photograph of the parathyroid adenoma at operation. Note a vessel crossing the upper third of the tumor. The left lobe of the thyroid gland is retracted toward the midline.



FIG 6 Low-power photomicrograph. Note capsule remnant of normal parathyroid and adenoma.

thetic. The elbow was immobilized in molded plaster splints. Because the fractured ends of the bone were not considered to be in satisfactory position, the cast was removed and the forearm was suspended at right angles to the elbow by means of adhesive traction. This appreciably improved the position of the fragments. A few days later an anterior and posterior molded splint was applied while the elbow was in a suspended position.

For several days it was observed that the patient was voiding frequently and that her output was excessive. It was suggested that the polyuria might be due to the forward pressure on the thyroid or possibly to pituitary disturbance. A sugar tolerance test, made to check the possible pituitary tolerance, was found to be normal. The polyuria was then explained on the basis of the hyperfunctioning adenoma and overactive hormone stimulation.

The general decalcification of the bones, the high serum calcium, low phosphorous, and high serum phosphatase levels in her blood, and the presence of a swelling the size of a marble behind the upper lobe of the thyroid gland were fairly conclusive evidence that the decalcification of the skeletal structure was undoubtedly due to a parathyroid adenoma.

At operation on July 16, 1937, under cyclo

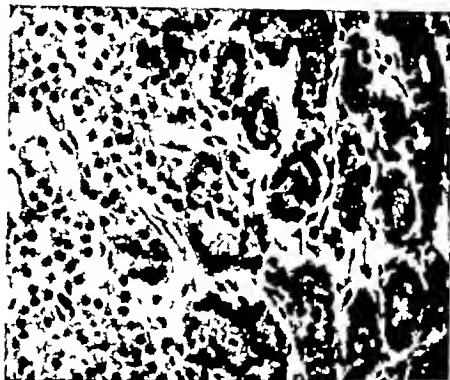


FIG 7 High-power photomicrograph. Note trabeculae of polyhedral cells with indistinct cell boundaries. Predominant chief cells.

propane anesthesia and with a Kocher incision, the ribbon muscles of the left side of the neck were divided between clamps and retracted. The left lobe of the thyroid was rotated inwardly, thus exposing the parathyroid adenoma directly behind the upper half of the left lobe of the thyroid gland. The tumor was very vascular and had a yellowish white stalk, approximately 1 inch long, which extended back to the origin of the superior thyroid artery. There was a large vessel, partially constricting the tumor, which ran transversely across the middle and upper third of the adenoma (Fig 5). This vessel was divided between clamps and ligated. The left inferior parathyroid gland was exposed and was found to be apparently normal. There were dense adhesions on the mesial and under surface of the adenoma. The yellow stalk was readily traced, freed, and divided between clamps at its origin. The tumor, approximately 3.2 by 2.9 by 1.8 cm and weighing approximately 7 Gm was removed. The left lobe of the thyroid which had been rotated inward was dropped back into position and approximated with fine chromic on its posterior and lateral border to the soft tissue directly adjacent. The ribbon muscles were approximated with fine chromic, and the skin edges were closed with clips.

Pathologic report of the specimen (reported by Dr A. Kantrowitz, director of laboratories, on August 4, 1937) follows. The gross specimen consists of a more or less heart shaped nodule which is completely encapsulated. Its weight is 7 Gm. It measures $1\frac{1}{8}$ by $\frac{5}{8}$ inches. It is almost cystic to palpation. Under section the parenchyma seems to be buff colored and solid. The microscopic examination reveals that the mass consists of trabeculae of polyhedral cells with indistinct cell boundaries. The cytoplasm is pale pink and finely granular. The nuclei are hyperchromatic and basal. At times they appear pyknotic. At the periphery the cells appear smaller and darker. A few nests of clear cells are present. Attempts at gland formation were also noted. Nests of clear and chief cells are noted in the capsule. Diagnosis: Adenoma of the parathyroid gland (Figs 6 and 7).

The postoperative course was uneventful except for paresthesia in the extremities which the



FIG 8 Two years, eight months after operation. General porosity absent, there is a healthy restoration of the osseous pattern except in a few isolated areas indicating progressive filling-in process. The inner table outline is restored and the diploic space is restored. The sella turcica is well outlined and appears normal.

patient complained about and which lasted for approximately forty-eight hours. The plaster molded splints were removed on July 29, at which time there was evidence of firm union.

It is of interest to note that four days after the operation the calcium level in the serum was reported as 10.8 mg per hundred cubic centimeters, and the phosphorous level was 2 mg per hundred cubic centimeters. There was a rise in serum phosphatase to approximately 31 units.

The patient was discharged on August 21, the wound having healed by primary union. The function of her right elbow was completely restored, there being no disturbance in the carrying angle or limitation in flexion, extension, supination, or pronation.

Radiographic examination on August 9 and October 6 of that year did not reveal any appreciable change in the structure of the cysts or any of the other decalcified areas except at the site of the fracture which had healed and showed some areas of calcification.

Four months after the operation, in November, the patient was readmitted to the hospital because of the absence of menses during the previous two months. At that time the serum calcium was 8.6 mg per hundred cubic centimeters, phosphorus 2.6 mg per hundred cubic centimeters, and phosphatase 14.5 units.

We were very much disturbed over the possibility of pregnancy. McCoogan,¹⁴ in August, 1937, reported the effect of pregnancy upon tumor growth and bone metabolism. He reviewed 5 cases reported in the literature and added his own. He concluded that pregnancy would aggravate the disease, that increase of parathyroid activity in pregnancy would result in further decalcification and that the available calcium would be utilized by the fetus before the mother's need could be supplied. It is interesting to note that McCoogan and other observers were of the opinion that pregnancy should



FIG 9 The fractured lower end of the humerus is completely healed, the previously osteolytic areas are now entirely replaced by dense osseous structures.



FIG 10 Complete healing of decalcified lesions in the lower third of the shaft of the ulna.

not be undertaken by women affected with this disease for fear that pathologic fractures might ensue, and he was of the opinion that therapeutic abortion should be considered. Fortunately for her, several days after her readmission to the hospital, the Friedman test of her urine was reported as negative, and her menstrual flow was resumed.

Radiographic examinations and metabolic studies at intervals of six months to one year



FIG 11 No evidence of calcific shadows in the genitourinary tract. The rarefied areas in the pelvic flares now show complete osseous restoration.

during the past two years and eight months have shown a progressive improvement. In the skeletal structure the decalcified areas have filled in with normal bone. The metabolic studies reveal a gradual return of the calcium, phosphorus, and phosphatase in the serum to normal levels.

The last examination on April 5, 1940, when she was presented before the Surgical Section of The New York Academy of Medicine, the patient had gained in weight, and she reported that she had resumed all her household activities and that she was employed. The function of the elbow was complete, the headaches which had been so distressing no longer recurred, she was no longer constipated and rarely took a cathartic. She did not have to void after retiring for the night, her "rheumatic" pains have not recurred. She had again missed three menstrual periods, but her menses had since been resumed. She was more alert and active. The last chemistry, as reported on April 1, revealed a calcium serum level of 11.4 mg per hundred cubic centimeters, phosphorus 1.5 mg per hundred cubic centimeters, and phosphatase 7.5 units (King-Armstrong). Cholesterol was reported as 130 and the cholesterol ester was 75, with a percentage of 58.

The radiographic studies revealed an extensive replacement of the decalcified areas by new bone. The skull disclosed a much increased density (Fig 8). The diffuse mottling appearance previously existent was now replaced by a homogeneous normal bone structure. The inner table was restored, and the diploe could be traced. The lower end of the humerus showed the presence of a completely healed fracture, the

previously osteolytic areas were now entirely replaced by an osseous structure of a rather dense nature (Fig 9). The lower end of the ulna showed complete osseous restoration (Fig 10). The femora also disclosed an excellent attempt at anatomic restoration of the previously involved areas. The left humerus and left forearm revealed a dense sclerosis—the attempt at restoration of a normal bony pattern in the lower shaft of both radius and ulna—while the left humerus disclosed the restoration of normal bony pattern except for a mild amorphous sclerosis at the point of greatest previous osteolytic activity. Radiographic examination of the right and left legs revealed complete obliteration of the areas of rarefaction previously described. A long calcified island was noted in the lower left tibial region. The radiographic examination of the genitourinary tract revealed that the calcific shadows previously noted were now absent (Fig 11).

Conclusions

A case is described which presents the metabolic, roentgenographic, and clinical syndrome criteria which are conclusive evidence of excessive parathyroid hormone activity due to a neoplasia of the parathyroid gland.

A pathologic fracture through a multiloculated decalcified lower humerus suggested radiographic examination of the remaining skeletal structure. This disclosed the general appearance of osteitis fibrosa cystica and revealed pinpoint calculi in both kidneys probably due to marked increase in excretion of calcium and phosphorus which resulted in some renal insufficiency as indicated by the Mosenthal test.

A palpable mass behind the upper portion of the left lobe of the thyroid gland further suggested an adenoma of the parathyroid as the etiologic factor.

The elevated serum of calcium of 11.5 mg per hundred cubic centimeters, a low phosphorous level of 2.1 mg per hundred cubic centimeters, and an elevated serum phosphatase of 26 units were conclusive evidences of increased parathyroid activity which justified exploration of the parathyroid regions and removal of the tumor of the parathyroid gland.

Ablation of the parathyroid adenoma resulted in a restoration of normal physiologic parathyroid hormone activity as manifested by normal calcium, phosphorous, and phosphatase levels in the serum, restoration of the normal bony structure of the demineralized bone with attempts at sclerosis, disappearance of the calculi in the kidneys, as well as constipation, lassitude, headaches, and polyuria.

which were the predominant subjective symptoms associated with her injury

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CHRONIC RHEUMATOID ARTHRITIS WITH GRANULOMA OF THE SPLEEN AND LYMPH NODES IN A PATIENT PRESENTING THE CLINICAL PICTURE OF FELTY'S SYNDROME

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IN 1924 Felty¹ described a syndrome appearing in 5 undernourished patients of middle age whose cardinal symptoms were chronic arthritis of the rheumatoid type, splenomegaly, leukopenia, lymphadenopathy in 3 of the patients, secondary anemia, and yellow-brown pigmentation of the exposed skin surfaces. It was indicated by Felty in his report that the picture might represent a single pathologic process, the counterpart in adults of Still's disease, or that the syndrome might consist of two clinical conditions occurring coincidentally—chronic arthritis and Banti's disease. He concluded, however, that the syndrome was a distinct clinical entity of obscure etiology with outstanding symptoms referred to the joints, spleen, and blood. Following Felty's publication, which was essentially a clinical presentation, a number of other reports of the syndrome have appeared supplemented in some instances by microscopic studies of spleen and lymph nodes removed surgically^{2,3} or at necropsy.^{4,5} The pathologic reports of these cases, while varying in some details, agree on the whole in disclosing nonspecific changes of acute or chronic inflammation in the spleen and lymph nodes. We offer our own case report because of the previously undescribed pathologic findings in a patient presenting the typical clinical picture of Felty's syndrome.

Case Report

Clinical Record—Patient D F was treated intermittently in our Arthritis Clinic and was admitted to the wards of the Fourth Medical Division Bellevue Hospital, four times for stays of six days to one month on different occasions from July 4, 1928 to May 13, 1936. The

record of this patient is so voluminous that a combined résumé of all admissions and observations is presented.

The patient first entered the hospital July 4, 1928, when he complained of stiffness and pain with some swelling of the left knee joint of two years' duration and swelling of the joints of the hands and fingers.

The salient features of the initial examination were palpable spleen border below left costal margin, symmetric bilateral rheumatoid changes of fingers and wrists, and some swelling and stiffness of shoulders, elbows, and knees. At each subsequent admission to Bellevue, generally enlarged lymph nodes and splenomegaly were found and associated with progressive rheumatoid disease. The patient at times ran a low-grade fever. At the second admission to Bellevue the spleen was palpable five f b below the costal margin, and anemia with leukopenia was noted. The patient during his two further stays at Bellevue showed increasing enlargement of the liver and spleen, the splenic border finally reaching to the iliac crest. Other observations were an increasing dyspnea, edema of the lower extremities and ultimately also of the face and upper extremities, and pallor and brown, blotchy pigmentation of the exposed skin. At the final admission after a progressive downhill course, myocardial and renal insufficiency developed and progressed until death.

The laboratory studies, repeatedly performed but giving no abnormal information were sputum examinations for tubercle bacilli, tourniquet tests, gastric analyses, blood cultures, blood calcium, phosphorus, phosphatase, sugar, creatinine, albumin, globulin determinations, icteric index and van den Bergh's test, stool examinations for parasites and blood, streptococcus agglutinations of blood and joint fluid, cell count cultures and guinea-pig inoculation of joint fluid, blood and joint fluid Wassermann and G C fixations, bleeding time, coagulation time, fragility test, congo red test, urine concentration and dilution, splenic aspiration,

TABLE 1—BLOOD STUDIES

	R B C, %	Hemo- globin %	W B C, %	Poly- morpho- nuclears, %	Lym- pho- cytes %	Mono- cytes, %	Eosino- phils, %	Smear	Platelets	Retic- ulo- cytes, %
7/ 1/35	1 43	35	4 7	63	37			Bands Polychromasia Basophils stippled Poikilocyte & anisochromasia Myelocytes 2		
7/15/35	2 5	50	3 4	72	20	5	1			
7/25/35	3 09	50		(Post transfusion two days)						
4/27/38	2 35	45	2 4	60	40			Achromia Poikilocytes	30,000	2
4/29/38	2 5	45	3 4	75	25					3
5/ 2/38	1 85	45	4 6	70	30					

spinal fluid-cell count, globulin, sugar, Wassermann, and colloidal gold, blood type, 1 Janski, and blood pressure 110/70. Blood counts showed repeated leukopenia and severe anemia as indicated in Table 1.

Two lymph node biopsies at other institutions and one at Bellevue at various times were reported as showing the "characteristics of chronic inflammation."

The blood nonprotein nitrogen and uric acid were normal until the last admission when the patient developed circulatory and renal failure. The nonprotein nitrogen rose in two weeks from 31 to 56 mg and the uric acid from 7.8 to 13 mg. Urinalysis at this time repeatedly showed a trace of albumin and many hyaline casts. Sedimentation rates varied between 18 to 21 mm (Cutler).

X-ray pictures showed changes associated with rheumatoid arthritis of the atrophic type in the shoulders, hands, elbows, and knees.

At the final admission the clinical picture was that of chronic, active, typical rheumatoid arthritis associated with generalized lymphadenopathy, splenomegaly, hepatomegaly, ascites, advanced arteriosclerosis, and anemia with depression of all the blood elements. The following clinical features pathognomonic of so-called Felty's syndrome were presented by the patient: chronic rheumatoid polyarthritis, splenomegaly, leukopenia, anemia, adenopathy, and skin pigmentation. Obviously, in the absence of any contrary laboratory or pathologic findings, all the requirements for the clinical diagnosis were present.

Pathology—A complete autopsy was not permitted, but removal of a lymph node and a splenic biopsy were allowed.

Dr Douglas Symmers and Dr W C Hutcheson after examination of both tissues rendered an official report of Hodgkin's disease associated with terminal miliary tubercles. There were changes suggestive of an aleukemic myelosis but not sufficient to justify such a diagnosis. The microscopic pictures here (Figs 1 and 2) were obviously distinct from the "chronic inflammatory changes" in the spleen and lymph nodes in Felty's syndrome previously reported.^{2,4,5}

Discussion

There are several features in this record worthy of further consideration. The elevated blood uric acid at the last admission is a finding occasionally reported in the leukemias and con-

sidered in association with joint involvement by some authors as evidence of simultaneous gout and leukemia or as a pseudo gout secondary to the blood dyscrasia. Because of the previously normal levels of blood proteins and uric acid in our patient and because of the appearance of the elevated uric acid determinations at term, when the patient's constitutional state was low with failing circulation and renal function, we attributed the accumulating uric acid to increased cell destruction and reduced kidney function.

The most unusual feature of this bizarre picture is the association of the pathology of Hodgkin's disease (or aleukemic myelosis) with Felty's syndrome. We have found no reference to rheumatoid arthritis accompanying Hodgkin's disease in the literature of the past ten years. In publications on Felty's syndrome, Still's disease, and Still-Chauffard syndrome we have seen no mention of these clinical pictures associated with Hodgkin's disease (or aleukemic myelosis). A number of case reports have appeared lately of acute and chronic arthritis complicating the leukemias, chiefly in children. It is well known that bone involvement may occur in the blood dyscrasias, but invasion of the joint tissues, particularly the synovia and capsule, apparently is rare or has not been recently reported.

The question of the etiologic relationship between the clinical features and the pathologic findings in this case naturally arises. Without joint tissue studies one may speculate only on the likelihood of a basic infectious process of obscure origin as the causative agent for the entire clinical and pathologic picture. Latent tuberculosis responsible for the terminal miliary tubercles cannot be ignored as a possible infectious focus for the rheumatoid arthritis. The clinical course, as observed by one of us (O S) over a period of seven years, suggests that this patient probably was suffering from two unrelated, coincidental diseases, rheumatoid arthritis and the granulopathy, the latter accounting for the enlarged spleen, lymph node involvement, and the blood picture.

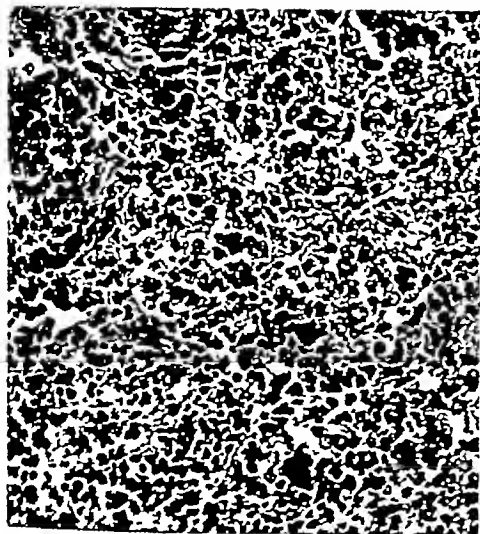


FIG 1 Lymph node section—X-100

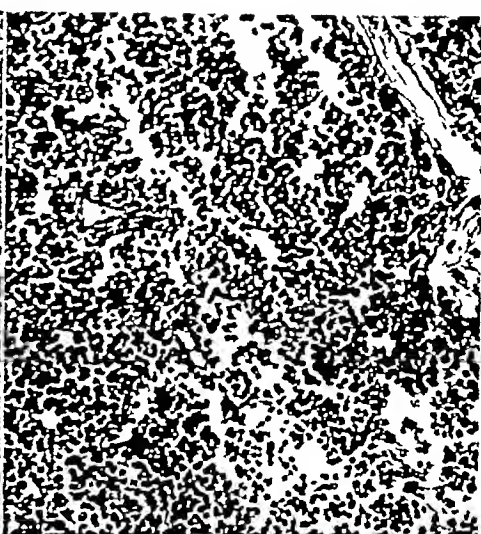


FIG 2 Splenic section—X-100

Certainly, the most important clinical feature in this case appears to be the splenomegalia, without which the antemortem diagnosis of Felty's syndrome could not be made. If the arthritis was related etiologically to the granuloma, the clinical picture was, then, entirely due to the dyscrasia, and the designation of Felty's syndrome becomes superfluous. If the splenic pathology and the arthritis were separate, coincidental features, the clinical diagnosis of Felty's syndrome is again untenable, since the splenomegalia is accounted for by a definite pathologic process. Even in the absence of joint tissue studies, we may state that in our patient the clinical picture of Felty's syndrome was proved by biopsy studies to consist of Hodgkin's disease (or aleukemic myelosis) and miliary tuberculosis of the spleen and lymph nodes with associated or, more likely, concurrent unrelated rheumatoid arthritis.

Conclusions

(1) Felty's syndrome, as a clinical entity must remain a presumptive diagnosis until the status of this symptom-group is evaluated by further clinical and pathologic knowledge.

(2) The clinical picture of Felty's syndrome, when supplemented by pathologic studies, in other instances, too, may prove to represent the coincidental occurrence of rheumatoid arthritis and some unrelated disease responsible for the splenomegalia, adenopathy, and other nonarticular features.

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STAB WOUND OF A SEVEN-MONTH PREGNANT UTERUS

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THE purpose of reporting this case is to point out several important observations: first, the happy ending of the case which terminated with the recovery of the mother and the normal delivery of a healthy baby two months later, second, the rare type of injury sustained by the uterus gravid seven months, third, con-

sidering what happened to this pregnant woman and taking into consideration the outcome, the important question comes up of how much trauma and surgery the pregnant uterus can endure without going into labor and emptying itself. In reading the national and international literature, comparatively few such injuries to the

pregnant uterus are reported. Our singular case went to full term, was followed by a normal delivery. In other case reports in the literature the surgeons were guided by the extent of trauma to the uterus or the viability of the fetus, either cesarean section was practised or in some instances hysterectomy was done.

Case Report

E C, negress, aged 20, gravida I, seven months pregnant, was admitted on June 3, 1939, to the Second Surgical Division of Morrisania City Hospital for a stab wound of the abdomen, inflicted with a kitchen knife (allegedly by her husband) about one-half hour prior to her admission. Several hours before the stabbing there was a period of excitement. During the altercation there was a violent argument with exchange of blows between husband and wife which culminated with the stabbing. The patient was brought to the hospital by ambulance, and morphine sulfate $\frac{1}{4}$ grain was immediately administered. Her family and past histories were irrelevant. During her fifth month of pregnancy she had been admitted to the hospital for two days, complaining of periumbilical pain with no vaginal bleeding. Her condition cleared up and she was discharged. Her Kahn test at that time was negative.

Physical Examination—Examination showed a well-developed, well-nourished negress who appeared to have a moderate amount of abdominal pain. There was no dyspnea, cyanosis, or orthopnea. The patient did not appear to be in shock. Her head was normal, with no evidence of trauma. Her pupils were miotic, reacting slightly to light and accommodation (morphine effect?), and the conjunctiva was pale, indicating the presence of marked secondary anemia. There were no abnormalities of the chest, ears, nose, and throat, nor was there any rigidity of the neck, palpable thyroid, or masses. The breasts were full, with expressible milky secretion. Lungs were clear to percussion and auscultation. Cardiac point of maximum impulse was in the fourth intercostal space just inside the midclavicular line. The heart sounds were good, with no murmurs. The ventricular rate was 112 per minute and regular. Her blood pressure was 134/74. Her abdomen was protuberant, with uterine fundus just above the umbilicus, corresponding to a seven-month pregnancy. In the left upper quadrant, considerably to the left of the median line, there was a stab wound, about $\frac{3}{4}$ inch in length, through which was protruding a small tab of omentum. This buttonhole stab wound, if prolonged downward toward the median line, would have described an acute angle, apparently penetrating the abdomen inward and downward. There was slight pain and tenderness over the entire abdomen, with no rigidity throughout. There was no evidence of any uterine contractions. The fetal heart was not heard, although the patient could feel a viable fetus. A vaginal examination was not done, but inspection revealed no vaginal bleeding. There was no edema, clubbing, cyanosis, or coldness of the extremities and the reflexes of the extremities were normal.

Diagnosis—(1) Stab wound of abdomen en-

tering the peritoneal cavity, with a protruding tab of omentum traumatized and bleeding, (2) seventh month of pregnancy.

Laboratory Findings—The findings confirmed the suspicion of internal bleeding. The temperature was 99.2 F, pulse, 112 per minute; respirations, 28 per minute, red blood count, 1,760,000, hemoglobin, 65 per cent (Talquist), blood type, 3 (Moss), white blood count, 9,700, polymorphonuclears, 75 per cent, stab cells, 2 per cent, lymphocytes, 22 per cent.

Urinalysis Urinalysis showed a clear amber fluid, specific gravity 1.020, an acid reaction, and no albumin or glucose. Microscopic examination revealed no red blood cells or casts and occasional white blood cells and epithelial cells.

In view of the marked anemia and the diagnosis of penetrating wound of the abdomen, a transfusion of 500 cc of citrated, cross matched blood was started, and the patient was prepared for an emergency exploratory laparotomy.

Operative Technique—The patient was operated upon, eighty minutes after admission, under nitrous oxide, oxygen, and ether. In selecting the incision I was guided by the presence of the stab in the left side. It seemed logical that if any perforation existed or if there were any possible trauma in the abdominal cavity it would be in proximity to the point of entrance of the knife. A median incision above the umbilicus might have given easy access to explore the abdomen generally, but in the event of an immediate labor, it would have been an easy cause for evisceration because of having no muscle support. The abdomen was prepared for an exploratory laparotomy. The protruding omentum was cleaned with ether and ligated at the base, the traumatized portion was severed, and the stump was pushed under the skin through the buttonhole wound. A left upper rectus incision was made. The peritoneal cavity was opened and found to contain about a liter of blood and some small clots. This large quantity of hematic fluid suggested at once that perhaps it might be blood and amniotic fluid. The abdominal cavity was gently dried up with laparotomy pads and the suction pump. When this was finished the uterus was examined, and there was found a penetrating wound, profusely bleeding, apparently going through the serosa and muscularis, $\frac{1}{2}$ inch in length, on the anterior surface of the fundus and slightly to the left, of the median line. No attempt was made to probe the depth of the wound because we were afraid that the amniotic membrane might be perforated and thus would permit the escape of the amniotic fluid which might cause the onset of labor pains. The margins of the stab wound, including the serosa and muscularis, were clamped with three Allis clamps. This procedure checked the bleeding, and it was concluded that the stab wound did not go beyond the muscle wall. Three mattress sutures of No. 2 chromic catgut were used to close the uterine wound and were reinforced by several interrupted chromic catgut sutures. The peritoneal cavity was completely cleared of blood and blood clots, and the intestines were explored for other possible injury or bleeding. No evidence of perforation or trauma was found. The peritoneum was closed with double black silk and two plain catgut muscle sutures were taken. The fascia

was closed with double silk and the skin with interrupted silk Stewart sutures and two retention sutures. The purpose of using silk sutures for the peritoneum and fascia was that should labor pains set in the abdomen would have enough support with such strong sutures. The wound was considered potentially infected. The entire operation consumed thirty-five minutes.

Postoperative Diagnosis—Stab wound of the abdomen entering the peritoneal cavity and penetration of the uterine wall, but probably no penetration of the placenta or membranes.

Postoperative Course—There was no post-operative or post-transfusion reaction. The next day the patient was given 1,500 units of tetanus antitoxin. An obstetric consultation was obtained, and the obstetrician noted that "fetal movements were felt by the patient and also on palpation. The fetal heart was good, heard in the right lower quadrant, and the rate was 140 per minute and regular. No vaginal bleeding. The fetus is definitely alive at this time." The postoperative course was smooth, although she occasionally experienced abdominal cramps which were controlled by morphine. Fetal movements could always be felt, and at no time was there vaginal bleeding. Her pulse and temperature remained normal with one or two rises to 100 F. The wound healed by primary intention, with alternate sutures being removed on the ninth postoperative day and the remainder on the tenth. During this period the blood picture of the patient revealed that the hemoglobin and red blood count were approaching normal. The patient was out of bed on the thirteenth day. She was discharged on the fifteenth post-operative day and was sent to the Pre-Natal Clinic.

Follow-up—On August 6, 1939, four days before her computed date of confinement the patient was admitted in labor. The total duration of labor was nine hours and was terminated by an episiotomy and prophylactic low forceps

Her labor and postpartum course were normal in every respect. The previous abdominal scar showed no evidence of herniation. The female baby weighed 5 pounds, 1 ounce and had no scars or deformities. The membranes and placenta were intact and showed no abnormalities. Mother and baby were discharged on the tenth postpartum day, both doing well.

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SULFAPYRIDINE IN THE TREATMENT OF STAPHYLOCOCCUS SEPTICEMIA

Report of a Successfully Treated Case

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EVER since the introduction of sulfonamide compounds for the treatment of bacterial infections, attempts have been made to extend this method of chemotherapy to infections caused by the staphylococcus. In spite of the fact that the early findings of such pioneer workers as Domagk² indicated the efficacy of chemotherapy in localized staphylococcal infections, as for example urinary tract infection, no uniformly beneficial results were obtained in Staphylococcus septicemia. Concurring with these experiences Long and Bliss⁷ in their recently published textbook state that their

observations led them to conclude that sulfanilamide has "but slight value" in the treatment of staphylococcal infections other than those of the urinary tract.

However, since the advent of sulfapyridine, renewed hope has been envisioned for the treatment of Staph septicemia. The earliest reports of successful results in Staph septicemia treated with sulfapyridine (M & B 693) appeared in the *Lancet* in the latter part of 1938. At this time Fenton and Hodgkiss,³ O'Brien and McCarthy,¹⁰ and Maxwell⁹ reported a total of 3 patients with positive blood cultures in whom recovery re-

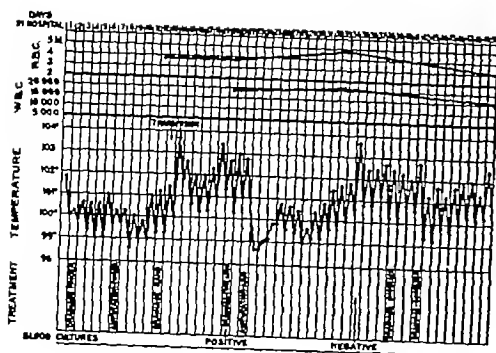


FIG 1 Chart of course in hospital prior to sulfapyridine therapy. This illustrates the periods of slight improvement following drainage operations, amputation of the finger, and amputation through the arm.

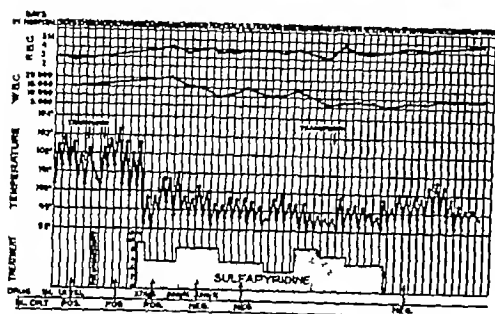


FIG 2 Chart of course in hospital following the institution of sulfapyridine therapy. Note the resulting sudden fall in temperature which was sustained at a low level. Two blood culture samples taken between the last two "negative" reports yielded only a minimal growth of *Staphylococcus aureus*. Growth was apparent in as late a period as eight days.

sulted McConney⁸ reported a successfully treated case where the primary lesion had been a carbuncle on the face and the blood cultures were positive for *Staphylococcus aureus*. Chest symptoms were present in his patient. The physical findings were pleural friction rub and scattered rales. Dagenan (sulfapyridine) was given by mouth from February 6, 1939, to February 21, 1939. The temperature gradually subsided, and the blood became sterile on February 15, 1939. Goldberg and Sachs⁹ report 2 similar cases in children successfully treated with sulfapyridine. However, other therapeutic procedures, such as surgical drainage of the infected bones and localized abscesses, preceded or accompanied the chemotherapy. Finland and his associates⁴ report a case of Staph. septicemia subsequent to wound infection following a cholecystectomy operation. Though he instituted drainage of the abdominal wall and pelvic ab-



FIG 3 Posteroanterior roentgenogram showing involvement of right lung.

cesses, improvement and eventual recovery resulted only after sulfapyridine treatment was given. However, in a report of another case of *Staphylococcus bacteremia* with pneumonia, he stated sulfapyridine had no effect.

Early in 1939, Bliss and Long,¹ in an article on experimental work with sulfapyridine in staphylococcal infection, noted that they had "dramatic clinical results" in 2 patients with severe staphylococcal sepsis. In a later publication, Long¹ stated that he obtained rapid sterilization of the blood with sulfapyridine in 3 out of 5 cases of Staph. bacteremia.

Case Report

History—H. T., a white man, aged 45, mechanic, was admitted to the Boulevard Hospital on September 20, 1939, with the chief complaint of pain and swelling of the right fifth digit. Nine days before admission, while using a welding machine, the patient burned the proximal phalanx of the right fifth digit. His private physician made an incision over this area but secured only a minimal amount of pus. Thereafter, the edema, redness, and pain became progressively worse.

Examination—On admission, the patient appeared well developed and well nourished, weighing about 155 pounds. Examination of heart and lungs revealed nothing abnormal. The small finger of the right hand was uniformly swollen from base to tip. Dorsally, in the proximal phalanx, there was induration, discoloration, and a suppurating wound one half inch long on the ulnar side. Practically no edema or swelling of the dorsal or volar aspect of the hand was present. No tender or enlarged epitrochlear or axillary lymph nodes were palpated. The clinical diagnosis was infected burn of the right fifth digit.

Course in Hospital—On September 21, 1939,



FIG 4 Lateral view demonstrating wedge-shaped infarction localized in the apex of lower lobe of the right lung

the morning after admission, two lateral incisions were made over the proximal phalanx, and through-and-through drainage was established. However, there was obtained only a small amount of thick pus, which later yielded a pure strain of *Staph aureus* upon culture.

Following this initial operative procedure, the finger became worse. The entire digit appeared necrotic, simulating a carbuncle type of tissue involvement. At the same time the entire hand was markedly swollen, causing the patient severe pain. On September 26, the small finger was disarticulated at the metacarpophalangeal joint, and the wound was left open. For three days the patient's general and local condition improved. However, an area of redness and induration gradually developed on the dorsal aspect of the hand between the fourth and fifth metacarpal bones. On October 1, this region was widely incised, and *Staph aureus* was cultured from the wound. During the next few days the temperature gradually rose attaining a height of 103.5 F. The dorsum of the hand and the forearm gradually became more edematous. On October 9, incisions were made into the thenar and midpalmar spaces, and the radial and ulnar bursae were entered and connected by lateral forearm incisions. As on all previous occasions, the inflammation resembled the necrotic tissue appearance of carbuncle infection, and no large amount of pus was evacuated. The epitrochlear and axillary lymph nodes were now palpable and very tender. A culture of the evacuated seropurulent fluid yielded the same organism, *Staph aureus*. The temperature remained elevated at 103 F, while the edema and necrotic tissue gradually involved the region above the elbow. Blood culture at this time was strongly positive for *Staph aureus*, and numerous colonies appeared as early as twenty-four hours.

On October 11, amputation was performed through the middle third of the arm as a life-saving measure. All tissues, especially the deep fascia and intermuscular septums, manifested extensive edema. Twenty-four hours following amputation, the temperature dropped to within normal limits and remained at this level for eight days. Proximally below the shoulder, the edema began to subside, and the patient im-



FIG 5 Postoperative posteroanterior roentgenogram showing the suppurative pulmonary area well drained

proved clinically, enjoying freedom from pain for the first time. Blood cultures now became negative.

However this improvement was of short duration. On the eighth postoperative day the temperature began to rise, and seventeen days after amputation an abscess in the right anterior deltoid region was discovered and drained. Three days later, another collection of suppuration localized deeply in the trapezius muscle. This also was incised and drained, with only a slight drop in temperature the next few days.

On November 8 the temperature was elevated to 102.8 F, and the patient began to cough and expectorate white mucoid material. A chest examination revealed no abnormal findings until November 10, when he coughed up a small amount of blood-streaked mucus. Physical examination now disclosed a dull percussion note from the sixth to the eighth ribs posteriorly, and roentgen examination demonstrated a wedge-shaped infarction in this area corresponding to the apical region of the lower lobe of the right lung. Blood cultures were again positive for *Staph aureus*. The diagnosis of septic infarct of the lung was made and operation was decided upon to secure drainage of the pus. On November 14, under paravertebral block and local infiltration novocain anesthesia, a long, curved incision was made over the involved area, exposing the plane of the ribs under the extracostal muscles. Four- to 5-inch sections of the sixth, seventh, eighth, and ninth ribs were removed near the vertebral column, together with the contained muscle, vascular, and nerve bundles. Fortunately, the visceral and parietal pleurae were adherent, making possible a pneumonostomy procedure in one stage. The abscess cavity was widely unroofed and packed well with gauze, and the wound was left open. *Staph aureus* was also cultured from this wound. However, the temperature ranged between 100 and 103 F for six successive postoperative days, and it soon became evident that, in spite of all surgi-

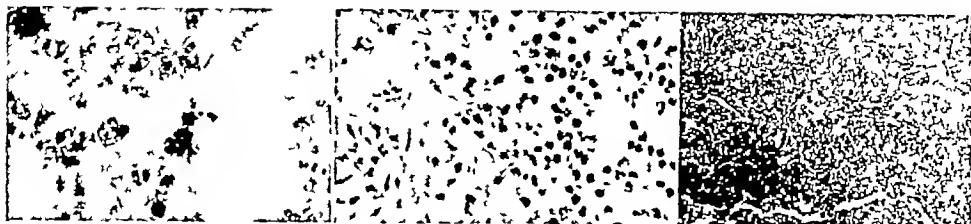


FIG 6

FIG 7

FIG 8

FIG 6 Oil immersion of resected pulmonary tissue showing intracellular gram-positive cocci.

FIG 7 High-power view of abscess area showing granulation tissue

FIG 8 Another section of lung tissue removed at operation representing a low power view of abscess with adhesions at pleural surface

cal treatment, the patient was unable to cope with this overwhelming infection.

On the sixth postoperative day intensive sulfapyridine therapy was instituted. The initial dose was 4 Gm followed by 1 Gm every four hours. Within nine hours after the initial dose of sulfapyridine, the temperature dropped from 103 F to normal, with a dramatic improvement in the patient's general clinical condition. Except for marked anorexia, he showed no untoward symptoms, and from that time on his condition steadily improved. Blood cultures taken thirty-six hours after the beginning of sulfapyridine therapy were positive but only to a very moderate degree.

The dose of the drug was gradually increased from 6 to 9 Gm daily, and blood cultures taken a week later were reported sterile. All subsequent cultures remained negative for eight days but then became very slightly (1 colony) positive coincidentally with gradual reduction of the drug to 4 Gm daily. Thereupon, the dose was increased to 9 Gm per day, after which time the temperature returned to normal and the blood again became sterile. After thirty-two days of this intensive sulfapyridine therapy the drug was discontinued because of a marked drop in the leukocyte and granulocyte count. However, all blood cultures remained sterile, and the patient was discharged from the hospital (total stay 109 days) with a well healing chest wound. Upon discharge his weight rose to 132 pounds. At present he presents only a small chest sinus with a bronchocutaneous fistula and is in excellent general condition.

Summary

The above patient seemed destined to a fatal

outcome because of the persistence of the growth of *Staph aureus* in the blood stream in large quantities. In spite of amputation through the arm above the area of widespread infection and pneumonostomy for suppurating pulmonary in fact, the patient proceeded along a rapid downhill course.

The introduction of sulfapyridine therapy was followed, in a few hours, by a drop in temperature from 103 F to normal. Definite improvement in the clinical course resulted, and blood cultures for *Staph aureus* were negative. The evident improvement following immediate institution of chemotherapy with sulfapyridine lead us to conclude that recovery can be attributed to the drug.

3064 Thirty-seventh Street

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PEDIATRIC COURSE

A course on pediatrics, arranged by Dr Charles Hendree Smith of the New York University College of Medicine for the Nassau County Medical Society, is being held at Long Beach Hospital, Long Beach, New York. On November 25, Dr C H Smith, of New York City, spoke on "Diet of Infants and Children." The balance of the schedule follows: December 23, Dr Hugh Chaplin, of New York City, "Care and Feeding of Prematures," January 27, 1941, Dr Gaylord W Graves, of New York City,

"Preventive Pediatrics and the Periodic Health Examination", February 24, Dr Philip M Stimson, of New York City, "The Infectious Diseases", March 24, Dr Frederick Wilke, of New York City, "The Anemias of Childhood", and April 23, Dr Katherine Dodge, of New York City, "Rheumatic Fever, Chorea and Heart Disease." This course is being given by the Committee on Public Health and Education in cooperation with the State Department of Health.

Maternal Welfare

From time to time under this heading articles appear on obstetric subjects which are deemed of importance as aids to improvement of Maternal Welfare in New York State. The members of the committee are Charles A. Gordon, M.D., Chairman, James A. Quigley, M.D., and Ferdinand J. Schoeneck, M.D.

Induction of Labor

CERTAIN complications indicate interruption of pregnancy. In such instances two methods are available: the uterus may be emptied by operative method, such as cesarean section, or labor may be artificially induced. It is the intent of this article to deal with the problem of instituting labor when such a procedure is indicated.

Case Report

Mrs. F. C., aged 43, gravida IV, was six months pregnant when admitted to the hospital because of an exacerbation of a chronic nephritis complicating the present pregnancy. Her blood pressure, which had been averaging 146/80, rose to 210/110, albumin was 4 plus, granular casts were present, and she complained of severe headache. It was deemed advisable to interrupt the pregnancy. Under nitrous oxide anesthesia, the cervix was digitally dilated sufficiently to admit a No. 3 Voorhees bag. Quinine sulfate (5 grains) was given each hour for six doses. Twenty-four hours later, inasmuch as labor had not started, the bag was removed. Blood pressure remained around 200/100, and the headaches continued. Twenty-four hours later the membranes were ruptured artificially, and another bag was inserted and quinine repeated. Labor failed to start, and the second bag was removed after another twenty-four hours. The symptoms subsided somewhat, and the blood pressure dropped to 170/90. A series of five hypodermic injections of 5 minims of pituitrin at half-hour intervals was given with no results. During the ensuing days, series of quinine and pituitrin, as well as thymophysin injections, were given. No results were obtained. Fortunately the toxemia did not progress, and there were no signs of infection present. Three weeks after admission to the hospital, the patient rather suddenly precipitated a macerated fetus by breech presentation. Convalescence was uneventful, and the patient was discharged in good condition, except for the persistent chronic nephritis.

This case is presented since it offers, for practical purposes, a catalog of the popular methods of inducing labor and demonstrates very forcibly the difficulties that may be encountered in this procedure.

The successful induction of labor depends to a great degree on the state of irritability of the uterus. If the uterus is almost ready to start labor, practically any method of induction will be successful. Hence, it may be assumed that the nearer the patient is to term, the greater will be the probability of starting labor. The condition

of the cervix and lower segment is a fairly good index. If the lower uterine segment is thin, the cervix partially or completely effaced, and some dilatation present, the induction of labor should be fairly simple, success may be expected with the employment of the simplest methods of medical induction. On the other hand, if the lower uterine segment is thick and the cervix long and undilated, the chances of starting labor are not particularly good, and it is in this type of case that the various surgical methods of induction must be employed. With the latter conditions present it may be feasible to consider abdominal delivery, unless, of course, the complication that indicates the interruption of pregnancy contraindicates cesarean section. In many instances of toxemia the uterus seems to be quite irritable regardless of the duration of pregnancy and, hence, will respond to the artificial methods of induction.

The time-honored method of induction of labor consists in the use of quinine and castor oil. One method employed prescribes an initial administration of $1\frac{1}{2}$ ounces of castor oil. Two hours later quinine sulfate (2 grains) is given and repeated at hourly intervals for five doses. Variations in dosage and interval are many. Quinine has been reported as a cause of intra-uterine death, as well as being a causative factor in deafness of the child. Authentic cases are on record where the administration of this drug precipitated premature separation of the placenta (ablatio placentae). It certainly cannot be said that this combination is without danger. The classic use of quinine sulfate in 5-grain doses has been discontinued in many centers in favor of 2- or 3-grain doses. Hot rectal enemas are sometimes used as an adjunct.

The use of pituitrin to induce labor is employed in a few centers. One method consists of hypodermic injection of $\frac{1}{2}$ cc. of obstetric pituitrin at half-hour intervals until pains start or six doses have been administered. Since it is well known that even 2 or 3 minims of pituitrin may cause tetanic contraction of the uterus with accompanying fetal distress, it should be evident that this method must be employed with discretion. A modification consists in the intranasal application of pituitrin. Small pledgets of cotton

saturated with 1 cc of pituitary solution are placed beneath the inferior turbinate bone and left in place a few minutes, application being the same as when hypodermic administration is used. Most authorities are agreed that pituitrin should not be used in obstetrics until labor has been completed. There may be legitimate exceptions to this rule, but it should be definitely understood that in administering any amount of pituitrin before the fetus is expelled from the uterus the possibility of rupture of the uterus must be considered. Safety would seem to predicate the dictum that pituitrin is too dangerous to be commonly used for induction of labor.

If a medical method of induction of labor is to be employed, it is probably safest to depend on castor oil and quinine.

Surgical methods of induction are quite varied. In general, it may be said that one of the principal considerations centers around infection. Any procedure that calls for invasion of the birth canal naturally presents the possibility of introduction of infection. Hence, asepsis must be of paramount importance. Further, the position of the presenting part must be considered, if the presenting part is not engaged, the rupture of membranes, whether elective or inadvertent, may result in the prolapse of the umbilical cord.

Perhaps the most simple surgical procedure is "stripping the membranes." The finger invades the cervical canal and detaches the membranes, without rupture, from their position in contact with the endometrium of the lower segment.

Another method consists in placing a gauze packing in the cervical canal and possibly in so doing separating the membranes from the uterine lining.

A popular procedure consists in simple rupture of the membranes which allows drainage of the amniotic fluid. Of course, this procedure, when successful, produces a so-called "dry labor." However, practical experience demonstrates that this method can be used and is generally quite satisfactory.

Still another method consists of introducing one or more bougies through the cervical canal so that they lie between the membranes and uterine lining.

Another procedure, popular in some centers, employs hydrostatic bags of the type introduced by Voorhes and Champrier de Ribes. These bags may be introduced "extraovularly," i.e., without rupture of membranes, or "intraovularly," i.e., after the membranes have been ruptured. Naturally, sufficient dilatation of the cervical canal must be obtained digitally or with

some dilating instrument to permit passage of the collapsed bag, which is then distended with an antiseptic solution.

While practically all popular surgical methods have been listed, simple rupture of membranes and bag introduction seem to enjoy the most usage. As has been mentioned, the greatest danger accompanying any surgical method of induction is infection. One series of bag insertions studied showed a morbidity rate of 12 per cent, and other methods show a somewhat similar incidence of infection. This single consideration should emphasize that such procedures must be limited to cases where the indication for induction of labor is beyond question.

The indications for artificial induction of labor in a general way include any maternal disease complicating pregnancy which endangers the life of the mother. Certain pathologic conditions of the ovum must be included. Such diseases would include uncontrolled toxemias, certain cardiac conditions, nervous disorders, such as chorea or multiple neuritis, diabetes, blood dyscrasias, pyelitis, polyhydramnios, placenta praevia, ablatio placentae, and similar conditions. Only certain cases of the types mentioned would call for the procedure.

Special mention should be made of the "post mature" child. This condition is comparatively rare, and the fact that a woman goes beyond the "estimated date" of confinement is not an indication per se. Further proof is needed to show that the child is actually postmature. On occasion, habitual intra-uterine death of the fetus in successive pregnancies may afford a true indication for induction prior to the time that the fetus has expired in the previous pregnancies.

Another indication, formerly occupying a true position of importance, centers around the induction of premature labor in the presence of contracted pelvis. Since cesarean section has been demonstrated to be comparatively safe in properly conducted cases of disproportion, this indication is seldom considered at present.

One point deserves special emphasis. Convenience, either for the patient or the physician, is definitely not a true indication for the induction of labor. The practice of artificially inducing labor at or near term purely for this reason is deserving of condemnation.

It would seem that a careful consideration of the seriousness of the indications, the complexity of methods employed, and the dangers outlined would make it quite apparent that any patient presenting a picture that indicates induction of labor is entitled to careful obstetric consultation.

Medical Preparedness

THE State Medical Society Committee on Medical Preparedness has received many inquiries concerning the requirements for admission of physicians to the Medical Reserve Corps of the United States Army.

There is an Army Regulation which provides that the applicant must be a graduate of a Grade "A" medical school. In practice, only the graduates of American or Canadian schools will be considered eligible, and in the latter case this includes only those schools approved by the American Medical Association.

The Medical Society of the State of New York is on record with the Committee on Medical

Preparedness of the American Medical Association suggesting that some modification of this regulation be made to allow physicians who are citizens of the United States but received their degrees from good medical schools abroad to be admitted to examinations for the Medical Reserve Corps.

It should be understood by all that an Army Regulation such as this can be changed only by the President or the Secretary of War. What possibility of such action there may be in the future is entirely unknown to the Council.

COUNCIL COMMITTEE ON MEDICAL
PREPAREDNESS

Participation of the Medical Department of the Army in the 1940-1941 Military Training Program

[This announcement has been issued by the Surgeon General of the United States Army—Editor]

UPPERMOST in the minds of all physicians is undoubtedly the question of national defense and, at the present time, of the plan of the medical departments of the armed forces to meet the immediate twofold problem of furnishing an adequate medical service to the men of our unprecedented peacetime Army and Navy, and of training the large number of Medical Department trainees who, at the expiration of their twelve months' military service, will pass to the Enlisted Reserve Corps and furnish the trained personnel required for mobilization in the event of a national emergency. It is felt that this timely article will be of great interest to the medical profession at large and of personal importance to those physicians whose participation in the military program is highly probable.

The total strength of the Army of the United States next spring will be approximately 1,400,000. This represents a Regular Army of 400,000 officers and men, the National Guard of the several states federalized as the National Guard of the United States numbering 200,000, and citizens selected for military training during the coming twelve months about 800,000 in number. The latter will receive their training in active units of the Regular Army and of the National Guard, in Regular Army inactive units activated for training purposes, in the numerous installations required for the overhead of these forces, and in Enlisted Replacement Centers throughout the nine corps areas of the country.

The Medical Department is charged with providing adequate medical service for the entire Army of the United States at posts, camps, and stations within and beyond the continental limits of the United States. In each military station in the United States there will be a hospital with four beds for each hundred of the military population. The operating room, kitchen, messing facilities, and clinics in each of these hospitals will be of sufficient size to provide service for one additional patient per hundred men so that in an emergency it will be necessary to construct only the additional ward buildings. Furthermore, there will be general hospitals suitably located throughout the United States

to provide an additional one bed per 100 of the military population.

The provision of 5 per cent of hospital beds which can be rapidly expanded to 6 per cent may appear excessive when compared with hospitalization provided for the civilian population of this country. However, all of the military sick, including such cases as in civilian life are ordinarily cared for in their home, must be treated in the hospital since they cannot receive satisfactory care in the barracks. In addition, when young adults are brought together in large groups, contagious and infectious diseases that spread rapidly under such conditions occur much more frequently than in civil life. Furthermore, sufficient beds must be provided for the care of the sick during the winter and spring seasons of the year when there is always an excessive number of such cases.

Scattered throughout the large camps or stations there will be dispensary buildings and dental clinics for the infirmary care and dental treatment of the personnel. In addition, in each large camp there will be a medical headquarters with properly qualified scientists for the general supervision of the medical activities, including the protection of the health of the troops, the careful inspection of food products, and the general supervision of the nutrition of the men.

The Medical Department will be charged with the training of the Medical Detachments and the Medical Department Units of the Regular Army and the National Guard and with the instruction of the service personnel in hospitals and other installations. It is also responsible for the preparation of the trainees in Enlisted Replacement Centers, in hospitals, and in service schools, who will receive there the individual Medical Department instruction which will permit their incorporation in organizations for further unit training.

The initial requirement will be approximately 65 doctors for each thousand men in the military service. Rapid calculation will show that the total number for an Army of 1,400,000 men will be 9,100 doctors. Additional ones may be required, but in the interest of economy the mi-

tial procurement will be limited to the number stated. The 1,200 physicians in the Regular Army and the 1,100 in the National Guard are included in the total, leaving approximately 6,800 physicians to be supplied by the Reserve Corps. There are now approximately 1,500 Reserve physicians, leaving 5,300 to be procured during the next few months.

Under the present Joint Resolution passed by the Seventy-sixth Congress, the President is authorized to order into the active military service of the United States for a period of twelve consecutive months each, any or all members of any Reserve component of the Army of the United States, with or without their consent, to such extent and in such manner as he may deem necessary for the strengthening of the national defense. If a sufficient number of officers do not indicate their availability for this service, Reserve officers must necessarily be ordered to duty without their consent. Additional appointments among physicians of draft age will increase the strength of the Medical Corps Reserve. However, it is apparent that a very large percentage of these officers must participate actively in the present program for preparing a portion of the country's man power for national defense.

In establishing rosters from which officers will be ordered to duty, Corps Area Commanders and Chiefs of Branches have been instructed to circularize all Reserve officers under their assignment jurisdiction to permit them to state the amount of deferment desired and the cogent pertinent reasons for such deferment in the event that they are not immediately available for military service. This action has been taken in view of the fact that a national emergency has not been declared by the Congress nor has mobilization been ordered. The medical service of a training program, although essential to national preparedness, possesses none of the glamour of the same service during actual military operations, it is, however, equally important. Indeed, military training may, through the thoroughness of its preparation for war, materially assist in preventing the necessity of participation in military operations. It is realized, of course, that all officers would express their immediate availability in the event of war, many, however, feel that their services are not of national importance at the present time.

Both the economic and the rational utilization of medical officers is essential. It is planned that in as far as possible qualified officers will be selected for assignment to duty with units and at installations according to their previous training and experience. Accordingly, selection must be qualitative as well as quantitative in order that the specific requirements of a modern medical service may be properly met. Officers selected for duty will be given the maximum possible advance notice of such action.

In this connection the Surgeon General has suggested that the following points be brought to the attention of all Reserve medical officers

- 1 When notified that you have been selected for active duty, submit at once the required report of physical examination. The disclosure of disqualifying defects prior to the issuance of orders may prevent a disruption of your practice or civil employment.

- 2 Orders issued will place you on active duty at your home or, if a temporary change of address has been submitted, at that location, and will direct you to report to a specific post, camp, or station for duty.
- 3 Travel to your station may be accomplished by automobile but no delay will be granted for that purpose above the customary time for travel by rail.
- 4 You will be reimbursed for travel at the rate of 8¢ a mile, based on the shortest usual railway route to your station.
- 5 Transportation for dependents to your first station will not be furnished by the Government. It is perhaps advisable that your family not accompany you since the housing problem at or within the vicinity of Army stations is frequently acute.
- 6 If you have no uniform and military equipment, these may be purchased at your first station.
- 7 Pay and allowances are as shown in Table 1.

The annual base pay is increased at the rate of 5 per cent thereof for each three years of service up to thirty years. Full time will be computed for all periods during which they have held commissions as officers in the Army, Navy, Marine Corps, Coast Guard, Coast & Geodetic Survey, and Public Health Service, or in the National Guard or Naval Militia, the National Naval Volunteers, or in the Naval Reserve Force or Marine Corps Reserve, when confirmed in grade and qualified for all general service, and with full time for all periods during which they have performed active duty under Reserve commissions and with one-half time for all other periods during which they have held Reserve commissions.

Physicians as a group will not be exempt from conscription for military training and service. Their deferment because of importance to civil communities is a function of the Local Draft Boards. Accordingly, it is difficult to approximate the number that will be inducted into the Army. Obviously, the training received by such draftees will be more appropriate and the services rendered the Army of greater value if the physicians who are eligible and qualified for appointment in the Medical Corps Reserve be commissioned in the Officers Reserve Corps for duty as medical officers, rather than continue their training as enlisted men.

Physically qualified graduates of approved schools of medicine who desire appointment in the Medical Corps Reserve for immediate active duty should make application to the Commanding General of the Corps Area in which they reside. Such applications may be submitted either before or after selection for military training and service, or after induction into the Army of the United States. No change in the classification of such applicants will, however, be made by local selective service boards until the actual letter of appointment has been received.

Appointments in the Medical Corps of the Regular Army will, in all probability, continue as at present through competitive examinations of Reserve officers who have not passed the age of 32 years at the time of appointment.

The Surgeon General of the Army, through Lieut Col George C Dunham, the representative

of the Medical Department in the House of Delegates, submitted a request to that body at its last meeting in New York in June, 1940, requesting the assistance of the American Medical Association in the classification and procurement of physicians for the Army. It was hoped in this way to procure the physicians required without disturbing too seriously the civilian medical service and at the same time to place the physicians enrolled in positions for which their previous training qualified them. The House of Delegates approved the request of General Magee and appointed a Medical Preparedness Committee. The United States Navy and the United States Public Health Service made similar requests.

Reference has been made to the action of the House of Delegates and to the working of the Preparedness Committee in previous issues of the *J. A. M. A.* The Preparedness Committee, the executive officers of the American Medical Association, the chairmen and members of the various state and local committees, have all given generously of their time and funds in this work. They have been of material assistance to the Surgeon General and Corps Area surgeons in the classification and procurement of Reserve Corps medical officers. They generously have offered their assistance in similarly classifying and procuring such physicians as may be required in addition to those in the Reserve Corps. Although the majority of appointments of additional Reserve officers for active duty at this time will be 35 years of age or under, a limited number of properly qualified physicians above this age will be required as chiefs of services of the many large hospitals to be established.

The history of our country has repeatedly

TABLE I

Grade	Annual Base Pay	Allowances			
		Rental allowance	Subsistence allowance (30 days)		
		With dependents	Without dependents	With dependents	Without dependents
Colonel	\$4 000	\$120	\$80	\$36	\$18
Lieut. Col.	3 600	120	80	54	18
Major	3 000	100	60	54	18
Captain	2,400	80	60	36	18
1st Lieut.	2 000	60	40	36	18

shown that there is no more patriotic group than the American physicians. They have always responded generously to their country's call for assistance. At this time, although this country is not engaged in war, the National Preparedness Program requires an adequate medical service. Without it, the program will be hampered materially. In addition to the adequate care of the sick and protection of the health of our young men in the camps, the Medical Department must be able to train its personnel to act in conjunction with the troops of the other Arms and Services so that in time of battle, if unfortunately that time should come, it may be able to collect efficiently and evacuate promptly casualties that occur on the battlefield so that each one may receive as promptly as possible efficient medical care. Let us repeat, the success of the National Preparedness Program depends to a large extent upon adequate medical service. American medicine appreciates its obligations and will furnish a sufficient number of properly qualified physicians.

COURSES ON GENERAL MEDICINE

The following course on General Medicine was arranged by Dr. William S. Ladd, New York City, Dean of Cornell University College of Medicine, for the Nassau County Medical Society.

November 18 The Significance of Laboratory Tests and Methods in the Practice of Medicine by Dr. Ralph G. Stillman, Assistant Professor of Medicine, Cornell University College of Medicine.

December 16 Endocrine Problems in Adolescence by Dr. Harry H. Gordon, New York Hospital.

January 20 Newer Chemotherapeutic Methods by Dr. Norman Plummer, of New York City.

February 17 The Relation of Vitamins to Disease by Dr. Norman Jolliffe, Associate Professor of Medicine, New York University College of Medicine.

March 17 Abdominal Pain by Dr. Edward M. Livingston, Assistant Clinical Professor of Surgery, New York University College of Medicine.

Dr. Walter W. Palmer of the College of Physicians and Surgeons, Columbia University, has arranged a course on general medicine for the Schoharie County Medical Society in Coblesville (held at 3 30 P.M.), and for Montgomery County Medical Society in Amsterdam (held at 8 00 P.M.).

Four subjects have already been presented November 19, Dr. David D. Moore, "Diabetes Mellitus", November 26, Dr. K. R. McAlpin, of Williamstown, Massachusetts, "A General Consideration of Anemia, Both Primary and Secondary", December 3, Dr. Harold J. Stewart, "Digitalis Therapy: Mechanism of Its Action in Congestive Heart Failure", and December 10, Dr. Albert Vander Veer, "Asthma".

On December 17, Dr. Leslie P. Barker will speak on "Syphilis", on January 7, 1941 Dr. Homer F. Swift will discuss "Rheumatic Fever", and on January 14, Dr. John D. Lytle will talk on "Nephritis". All the speakers except Dr. McAlpin are from New York City.

The army of self-medicators is recruited from the ranks of those who enjoy ill health and are willing to pay the nostrum-makers for their melancholy pleasure.—*Pennsylvania M. J.*

"I understand that Bette has cured her Scotch boy friend of stuttering. How did she do it?"
"She called him up long-distance, collect."
—*Illinois M. J.*

INSTITUTE ON RADIOLOGY
Syracuse University College of Medicine
Syracuse, New York

Saturday, January 18, 1941

Presented under the auspices of Central New York Roentgen Ray Society; Medical Society of the State of New York, Syracuse University College of Medicine, Division of Cancer Control of the New York State Department of Health

P R O G R A M

January 18, 1941

Syracuse University College of Medicine, Syracuse

Meeting called to order at 1 30 p m by

Albert Lenz, M D, President

Central New York Roentgen Ray Society

Opening Remarks

James M Flynn, M D, President

Medical Society of the State of New York

Chairman of the Meeting

Herman G Weiskotten, M D, Dean

Syracuse University College of Medicine

- 1 45 p m "Physics of Radiation for the Radiologist"
Edith H Quimby, Sc D, Associate Physicist
Memorial Hospital, New York City
- 2 30 p m "Roentgenological Aspects of Brain Tumors, Diagnosis and Treatment"
Merrill C Sosman, M D, Roentgenologist
Peter Bent Brigham Hospital, Boston, Mass
- 3 15 p.m "Indications and Results of Roentgen Therapy"
Ursus V Portmann M D, Radiation Therapist
Cleveland Clinic, Cleveland, Ohio
- 4 00 p m "Radiosensitivity of Tumors"
Fred W Stewart, M D, Pathologist
Memorial Hospital, New York City
- 4 45 p.m "The Cyclotron"
Stafford L Warren, M D, Chief Radiologist
Strong Memorial Hospital, Rochester, New York
- Discussion conducted by Louis C Kress M D, Director Division of Cancer Control,
New York State Department of Health

DINNER MEETING

7 00 p m Small Ballroom Hotel Syracuse, Syracuse, New York

Toastmaster—James M Flynn, M D

Introduction of Speaker by

Edward S Godfrey Jr, M D Commissioner

New York State Department of Health

Speaker

R R Spencer, M D, Assistant Chief National Cancer Institute, United States Public Health Service

Local Committee on Arrangements

Carlton F Potter M D, Chairman

Donald S Childs M D Lucas S Henry M D Foster C Rulison, M D

While the Institute is planned especially for radiologists all physicians in the state are cordially invited to attend The price of the dinner is \$2 00 No other fees will be charged The sponsoring agencies are very anxious to know how many plan to attend the afternoon session and how many will be at the dinner Reservations should be addressed to

O W H Mitchell, M D Chairman

Council Committee on Public Health and Education

Medical Society of the State of New York

428 Greenwood Place Syracuse New York

Medical News

County News

Albany County

Dr Frederick A Collier, professor of surgery at the University of Michigan Medical School, addressed the county society, November 27, on "Parenteral Feeding."

The county society cooperated with the Eastern New York Section of the American Chemical Society in presenting, November 12, Dr T T Tisdall, associate in pediatrics of the University of Toronto, in a talk on "The National Importance of Proper Nutrition."

Dr Thomas O Gamble delivered the vice-presidential address, "Caesarean Section" illustrated with slides, before the county society on October 23.

Allegany County

Dr George Roos, of Wellsville, who died there on November 5 at the age of 73, was treasurer of the county society for thirteen years, and had practiced medicine forty-three years.

Bronx County

The scientific program at the meeting of the county society on November 20 was as follows:

- (1) "Experimental and Public Health Aspects of Rheumatic Fever" Dr Homer F Swift
- (2) "Treatment of Rheumatic Heart Disease in Children and Adults" Dr Irving R Roth, (3) discussion by Dr David Greenberg Dr Jacob Burstein, and Dr Daniel J Dolan, with (4) a general discussion. Many valuable scientific exhibits dealing with rheumatic heart disease were shown.

Military preparedness was stressed at the meeting of the county society on October 22, with the following distinguished speakers: (1) Inaugural Address was by Dr Joseph Golomb (2) Military Preparedness (A) Activities of the Medical Department" Lieutenant Colonel W L Hoffman, Fort Hamilton (B) Preparedness Through Fitness," Dr Nathan B Van Etten, president, American Medical Association, and (C) Activities of the State Committee on Medical Preparedness" Dr Samuel J Kopetzky, chairman.

Broome County

Dr H Jackson King addressed the county society November 12, on "Acute Appendicitis Complicated by Peritonitis."

The publicity committee, Dr Frank M Dyer chairman has arranged for a regular weekly fifteen-minute radio broadcast for the dissemination of medical information." Every member is expected to broadcast on some medical subject or sideline." Articles in the local press also are planned.

Dutchess County

Dr W W Lasher, of the Post-Graduate Hospital, New York City addressed the county society, November 13 on "Intra-Articular Lesion of the Knee."

Erle County

Learning its lesson from England's bitter experience in the present conflict, the United States will not call up young doctors and interns for selective military service, Colonel Alexander Murray, in charge of the University of Buffalo's R O T C, told the county society on November 8 in Hotel Statler, as reported in the Buffalo *Evening News*.

England," said Colonel Murray, "learned a bitter lesson early in this war when she insisted that her young doctors and interns be put in trenches with the other young men. She soon found herself short of doctors."

The United States Government does not intend to call her medical men for service until they complete their internship and are fully qualified as physicians.

The society also passed a resolution of its economics committee asking the Board of Supervisors promptly to reconsider the recommendations of the County Welfare Department regarding the plan for an improved health program.

The plan involves permitting patients to call in their own doctors instead of going to Meyer Memorial Hospital, stipulating free limits.

The proposal calls for an estimated expenditure of about \$82,000 for six months, of which about \$38,000 would be fees for physicians. No doctor would be permitted to charge the county more than \$50 monthly for services to indigent welfare patients. At present, Buffalo physicians are performing free services that would total more than \$1 000 000 a year if a regular charge were made.

The Supervisors' Committee had voted on November 13 to table the plan. It was again brought up on November 25, but, because of disagreement between the state and county welfare departments over financing, the committee declined to approve it.

Dr Edmond E Blaauw, of Buffalo, was feted on November 14 by his friends at a dinner at the Saturn Club. Dr Blaauw presented an original paper on "Glaucoma Capsularis." Dr Ralph Lloyd, recent president-elect of the American Academy of Ophthalmology and Otolaryngology, was present to discuss the paper and paid tribute to Dr Blaauw and all that he has contributed to ophthalmology. Dr Blaauw was given a parchment certificate of life membership in the Buffalo Ophthalmologic Club.

Franklin County

The Saranac Lake Medical Society held its first meeting of the season in the John Black Room of the Saranac Laboratory on November 13. Drs S F Marshall and E D Kiefer of the Lahey Clinic, Boston, discussed "Medical and Surgical Treatment of Peptic Ulcer" at an afternoon clinic and a formal evening session. The society unanimously adopted a resolution recommending that all men entering the armed services

receive a chest x-ray before induction.—*Reported by LeRoy H Wardner, M D, Secretary*

Jefferson County

Dr Frederic R Calkins, chief of the surgical staff of both the House of the Good Samaritan and the Mercy Hospital at Watertown, was elected president of the county society at the annual meeting on November 14 at the Black River Valley Club

Dr Calkins succeeds Dr Harold L Gokey, of Alexandria Bay, and was elevated from the vice-presidency. He has served as president of the society before—elected January 11, 1912

Dr E Clifford Soules, of Carthage, was elected vice-president to succeed Dr Calkins. The secretary, Dr Charles A Prudhon, and the treasurer, Dr Walter Fox Smith, were re-elected. The censors elected are Dr Gokey, Dr Jesse R Pawling, Dr David G Gregor, Dr Harlow E Ralph, of Belleville, and Dr James B Mc-Askill

The guest speaker was Dr A C Silverman, of Syracuse, whose topic was "Acute Infections of the Nervous System"

Kings County

The scientific topics and speakers at the meeting of the county society on November 19 were (1) "The Present Status of the Problem of Arthritis," Dr Ralph Pemberton, and (2) "On Certain Special Eye Problems in Exophthalmic Goiter," Dr James H Means

The society voted to approve the "activities and purposes" of the Medical Expense Fund of New York. The fund provides an insurance plan for payment of medical expenses. Dr Thomas McGoldrick introduced the proposal that the society vote approval of the plan

The Friday Afternoon Lectures on December 6 and 13 were (1) "The Eye Ground Examination," Dr Arthur J Bedell, and (2) "Recent Advances in Diagnostic Radiology," Dr Bernard S Epstein. These are the last lectures of the fall series

The Medical Society of Bay Ridge celebrated its twenty-fifth anniversary on November 12 with a dinner and scientific addresses

Dr Paul Reznikoff spoke on the newer aspects of anemias. The paper was supplemented by slides. Dr George Brancato's discussion of the paper was followed by an open discussion

Dr Frank Eliot West, dean of the Long Island Hospital College of Medicine from 1912 to 1920 and Professor Emeritus of Therapeutics and Clinical Medicine at that institution since 1921, died at Brooklyn Hospital on November 21. He was 90

Dr West was a founder of the Associated Physicians of Long Island, former president and trustee of the Kings County Medical Society, and past-president of the Long Island Hospital College Alumni Association. He was the author of many professional papers in his medical field

A three-cents-a-day plan insuring its members up to \$500 a year medical attention in a manner similar to the Associated Hospital Service plan was started on November 15 by the newly formed Medical Expense Fund of New York, Inc., at a public meeting in the Brooklyn

Academy of Music. Two thousand physicians in seventeen counties of the state are affiliated with the project.

Speakers at the meeting, all of whom are members of the board of trustees of the Medical Expense Fund, were Dr Chas G Heyd, former president of the American Medical Association, Representative Emanuel Celler, of Brooklyn, Dr John B D'Albora, former president of the Kings County Medical Society, Dr Joseph Wrana, former president of the Queens County Medical Society, and Dr Frederic E Elliott, of Brooklyn, administrative officer of the organization

Nassau County

The scientific program presented before the county society on November 26 was as follows:

"A New Maneuver for Shoulder Delivery," illustrated by motion pictures and manikin demonstration, by Dr Charles Edwin Woods, Westbury. Discussion was opened by Dr Harvey B Matthews, Brooklyn, regional consultant, Subcommittee on Maternal Welfare, Medical Society of the State of New York. The sound motion picture, "When Bobby Goes to School," was also shown

New York County

In the *New York Times* for November 27 appeared the following excellent report of the annual election of officers in New York County:

"DOCTORS' VOTE SEEN A.M.A. VICTORY AS REGULAR TICKET SCORES SWEEP"

"Results in Annual Election of the New York Society, National Group's Biggest Unit, Is Held Blow to Socialized Medicine"

"The annual election of officers of the Medical Society of the County of New York, in which the regular ticket sponsored by the society's leadership was opposed by a group advocating changes in the established policies and principles of the American Medical Association, resulted in a clean sweep for all the candidates of the regular ticket

The tally of the vote, which was completed early yesterday morning at The New York Academy of Medicine where the election was held all day Monday, showed that 2,316 physicians and surgeons from New York County, nearly 50 per cent of the membership, had participated in the election, the most hotly contested in the society's 125 years, and had cast a vote of about 2 to 1 in favor of the candidates on the regular ticket. The vote, according to the society's officials, was the largest ever cast and showed that the city's physicians are beginning to take a keener interest than ever before in the problems confronting medicine in a changing world."

"Held Nationally Significant"

"While the election was local, it was regarded by leaders in both groups as having far-reaching national significance. The New York County Medical Society, it was pointed out, is the largest single component of the American Medical Association, which, in turn, speaks for organized medicine in the United States. A victory for the opposition ticket, running on a platform directly challenging the policies of the A.M.A., could have been interpreted in some quarters as a repudiation of some of the basic policies of

organized medicine by the membership of its most important unit

"The campaign preceding the election, carried on mostly through the mails, was marked by sharp exchanges on both sides. The opposition group, numbering among its leaders Drs Ernst P Boas, Henry B Richardson, Bernard S Denzer, Giles W Thomas, Carl Binger, Yale Kneeland, Jr, Harry S Mackler, and Edward K. Barsky, charged that horse and buggy minds were at the helm of organized medicine in the United States and in New York City. The leadership of the county society, of which Dr Walter P Anderton is president, retaliated by charging that the opposition group was aiming to bring socialized medicine in the United States."

"Results of Election"

"Dr B Wallace Hamilton, secretary of the society for the last five years, who was opposed by Dr Robert S Goodhart, was re-elected by a vote of 1,534 to 782. The other candidates and their votes were as follows

"Chairman of the Committee on Legislation—Dr Arthur M Master, 1,540 (re-elected), Dr Edward K. Barsky, 763

"Chairman of the Committee on Public Relations—Dr W Bayard Long, 1,415, Dr Ernst P Boas, 895

"Chairman of the Committee on Medical Economics—Dr William B Rawls, 1,427, Dr Yale Kneeland, Jr, 863

"Chairman of the Committee on Membership—Dr David H Orgel, 1,376, Dr Giles W Thomas, 872

"The chairmen of these standing committees also serve as members of the *comitia minora*, the society's board of directors

"Those named to the important post of censors were as follows

"Dr Luther B McKenzie, 1,468, Dr William Crawford White, 1,436, Dr Roy B Henline, 1,471

"The vote for the ten regular candidates elected as members of the House of Delegates of the Medical Society of the State of New York was as follows

"Dr Samuel B Burk, 1,490, Dr Arthur A Cnelli, 1,329, Dr Ira Cohen, 1,417, Dr B Wallace Hamilton, 1,502, Dr Alfred M Hellman, 1,473, Dr David J Kaliski, 1,546, Dr Francis N Kimball, 1,405, Dr Peter M Murray, 1,482, Dr R Emmet Walsh, 1,389, Dr Irving S. Wright, 1,448

"The candidates for other offices, who ran unopposed, received the following votes Dr Maximilian A Ramirez, president-elect, 2,031, Dr J Stanley Kenney, first vice-president, 2,030, Dr Conrad Berens, second vice-president, 2,005, Dr Alfred G Forman, assistant secretary, 1,924, Dr Kirby Dwight, treasurer (re-elected), 1,971, Dr John H Carroll, assistant treasurer, 1,921, Dr Walter P Anderton, trustee for five years, 1,741 "

A convention of the organized medical and dental professions of Greater New York was held at the Hotel Pennsylvania on December 2, with an impressive array of speakers

The alumni association of the De Lamar Institute of Public Health, Columbia University College of Physicians and Surgeons, gave a din-

ner in honor of Dr Harry Stoll Mustard, new director of the Institute, at the Hotel George Washington, New York City, on November 19

A long-range medical program for New York City, described as a translation of the eight-point national health platform of the American Medical Association to New York City's local medical needs, was presented on November 16 at a special meeting of the county society at The New York Academy of Medicine.

The program asks that one agency instead of several be responsible for planning and administering medical care to the medically indigent, that the county society demand from the city adequate appropriations for prevention of disease and care of the sick, that a coordinating council be provided to plan a united health program for the five boroughs, that a permanent health council be established in which medical as well as interested lay groups will be represented, that a council on medical care be formed for extending and improving hospital, outpatient, and home medical care, that a means be devised for the full utilization of beds in voluntary hospitals now vacant, and that the county society encourage the "honest experimentation in new methods of medical care"

The program was presented on behalf of a group of members by Dr Ernst P Boas, chairman of the society's committee on public relations and a member of the *comitia minora*.

A new medical care experiment providing for physician's services and other medical attention at \$3 00 a year per person was instituted at the Vladeck Houses on New York's Lower East Side on November 12

The plan, approved by the Medical Society of the County of New York, is declared to be the first prepayment health and sickness plan for slum-clearance housing project tenants in the United States

Under the arrangement members of the low-income group living in the project will receive medical care from physicians chosen by themselves and also will have the benefit of consultations, hospitalization, laboratory tests, and x-rays when necessary, with medicine and sick-room supplies at minimum rates and visiting-nurse service in the home when needed

The charge of \$3 00 a year a person or \$12 a year for a family of four or more may be paid in installments of as little as 25 cents a month, all money being turned over to the physicians serving

The plan will be supervised by the Corlears Hook Medical Association. Neighborhood physicians and two nearby hospitals, Beth Israel and Gouverneur, will take part in the experiment.

Dr Joseph Jordan Eller gave a series of lectures during the week of November 14 on "Tumors of the Skin," and conducted several clinics in San Jose, Costa Rica, on general dermatology before the Faculty of Medicine of Costa Rica. He was made an honorary member of this organization

Dr William Healy, of Boston spoke on "Psychiatry and the Normal Life" at The New York Academy of Medicine on December 12 in the course of "Lectures to the Laity on the Art and Romance of Medicine."

Niagara County

A symposium on obstetrics and gynecology conducted by four staff members of the University of Rochester featured the meeting of the county society on November 12 in Lockport.

Taking part were Dr R. N. Ritchie, Dr W. L. Ekas, Dr G. P. Heckel, and Dr D. H. Kariher.

After the symposium a new technicolor film showing "The Clinical Uses and Practices of Adrenal Cortex Extract" was presented and discussed by Dr James M. Scott, of Kalamazoo, Mich., and Toronto.

Oneida County

Dr Irving Pardee, director of the Neurological Institute, New York City, addressed the Utica Academy of Medicine, November 14, on "Endocrine Disease." A motion picture on "The Influence of Drugs on Gastro-Intestinal Motility" was shown.

Onondaga County

The scientific program of the Syracuse Academy of Medicine on November 19 contained these addresses and discussions: (1) "An Analysis of Treated Hay Fever Patients at the Allergy Clinic, Syracuse Free Dispensary," by Dr Marguerite P. McCarthy and Dr Joseph R. Wiseman, presented by Dr McCarthy and with the discussion opened by Dr Charles D. Post, (2) "Nodular (Adenomatous) Goiter—Present Day Concepts of Its Management," by Dr Frederick S. Wetherell, with the discussion opened by Dr William A. Groat, and (3) "Patent Ductus Arteriosus, with Operation—Case Report," by Dr Robert C. Schwartz, with the discussion opened by Dr Tyree C. Wyatt.

The Syracuse Obstetric Society met on November 12 for a "Discussion of Two Mortalities." A motion picture, Dr J. B. De Lee's "Eclampsia," was shown.

The effectiveness of the Syracuse Obstetric Society is attested by the regular attendance of obstetricians from Utica, Watertown, Auburn, and Binghamton, as well as the men from the immediate locality.

The College of Medicine at Syracuse University has been authorized by the war department to organize a general hospital for the United States Army. Dean H. G. Weiskotten announces

The hospital will be designed to provide for 1,000 patients under "combat conditions" and will require a complement of fifty-five commissioned officers to be selected from the college staff. Similar units are being formed at other medical schools.

Dean Weiskotten said the hospital unit will not be mobilized "prior to the declaration of a national emergency" without the consent of the personnel.

Dr R. S. Farr, professor of orthopedic surgery, has been selected to head the surgical service of the hospital and to serve as its peace-time director. Dr W. D. Ayer, professor of clinical medicine, will head the medical service.

Ontario County

Dr Philip M. Standish entertained the Canandaigua Medical Society at his home on November 14. Dr Herman Pearce of Rochester spoke on "The Treatment of Varicose Veins and Other Circulatory Conditions."

Oswego County

Dr William F. Conners, of Fulton, who died on November 14 at the age of 90, had practiced fifty-eight years and had held prominent posts in state, county, and city medical bodies.

Queens County

The annual meeting of the county society was held on November 26, and the following officers were elected for the ensuing year: president-elect, Dr Chester L. Davidson, secretary, Dr Walter L. Lynn, assistant secretary, Dr Ezra A. Wolff, treasurer, Dr Vincent Juster, assistant treasurer, Dr John Sheehy, historian, Dr W. Guernsey Frey, Jr., directing librarian, Dr William Benenson, assistant directing librarian, Dr Elmer Kleefield. The censors are Third District, Dr Daniel J. Swan, Fourth District, Dr Leo Goldberg, Fifth District, Dr Samuel Dillon, and at large, Dr Samuel M. Klein. The three trustees are Drs Frank R. Mazzola, Francis Riley, and Edward Veprovsky. Drs W. Guernsey Frey, Jr., and H. P. Mencken were elected delegates, and Drs Morris Bender, William Benenson, Elmer Kleefield, and Ezra A. Wolff were elected alternates.

Rensselaer County

The county society met on November 12, with a program featuring addresses by Dr John J. Keenan and Dr Harry T. Wygant. Dr Keenan spoke on "Estrogenic Substances" and Dr Wygant on "True Postoperative Ileus."

Rockland County

A course of lectures on diseases of the chest sponsored by the Council Committee on Public Health and Education of the Medical Society of the State of New York, has been arranged for the members of the Rockland County Medical Society. The meetings are held at the Summit Park Sanatorium, Pomona, at 3:30 P.M., each Friday, November 15 through December 27.

St. Lawrence County

Dr U. R. Plante, of Massena, was elected president of the county society at the annual meeting at Potsdam on November 7.

Other officers chosen were Dr William J. Baldwin, Potsdam, vice-president, Dr Samuel W. Close, Gouverneur, secretary emeritus, Dr Robert J. Reynolds, Potsdam, secretary, and Dr Lloyd T. McNulty, Potsdam, treasurer. Hereafter, annual meetings will be held on the second Thursday in October.

Major Fred D. Ritter, Syracuse, of the army medical corps, discussed the medical phases of the national defense plan.

Saratoga County

Dr Richard H. McCarty, 75, of Saratoga Springs, who died on November 16, had practiced fifty-four years.

Schenectady County

Dr Peter McPartlon, 68, of Schenectady, who died on November 20, was a pioneer in the battle against tuberculosis there and superintendent of the Glenridge Sanitarium for twenty-one years.

Schoharie County

Seven weekly postgraduate lectures on internal medicine are sponsored by the county so-

cety, it is announced by Dr David W Beard, president. The first in the series was given on November 19 in Cobleskill central school. Professors from medical colleges of New York City teach this postgraduate course, which is supplied by the State Medical Society to county groups.

Tompkins County

At a meeting of the county society on November 26, the following physicians were elected to membership: Dr Muriel Cuykendall and Dr Adrian G Gould, Ithaca. The speaker was Dr W P Van Wagenen, of Rochester, who gave a most interesting and instructive talk on "Differentiation of Surgical and Nonsurgical Type of Head Injuries"—*Willels Wilson, M.D., Secretary-Treasurer*

Ulster County

Dr William S Bush, president of the county society, was a principal speaker at a meeting in Kingston on November 12, to promote a larger public health nursing program in the county. Other speakers were Dr Frederick W Holcomb and Dr Hollis S Ingraham, district health officer.

Westchester County

The American people have paid so little attention to physical fitness that it will be necessary to draft 3,000,000 men to secure an army of 2,000,000, Dr Nathan B Van Etten, president of the American Medical Association, declared at the 143rd annual meeting of the Westchester Medical Society, on November 19. "We are boastful of our schools and colleges of our increased literacy, our number of college students," he said. "We have idealized life in the learned professions, we have educated so many people to wear white collars that there are not enough people who are fit for the skilled mechanical work we now need so badly."

'We have stimulated false pride in attainment of college degrees and dislocated labor by crowding some fields while others are poorly supplied. We have encouraged a complacent snobbery that looks down its nose at productive labor. We have paid so little attention to physical fitness that we shall have to draft 3,000,000 men if we shall secure an army of 2,000,000."

He advocated a new health program, in which a national department of health with a secretary of health in the President's Cabinet would play an important part.

Dr Reginald A Higgons, of Port Chester, was elected president of the society to succeed Dr Henry J Vier, of White Plains. Dr George C Adie, of New Rochelle, was elected vice-president, Dr E Christopher Wood, of White Plains, second vice-president, and Dr Minervini, of Yonkers, secretary, and Dr William A Newlands, of Tarrytown, treasurer. Dr Vier, Dr Wilbur W Stearns, of Yonkers, and Dr Walter H Brundage, of Pelham, were elected to the Board of Censors for two years. Dr Arthur F Heyl, of New Rochelle, Dr Andrew A Eggston of Mount Vernon, and Dr Romeo Roberto, of Yonkers, were elected delegates to the State Medical Society.

Addresses were also delivered by Dr Higgons and Dr Vier. James E Bryan, executive secretary, reported that 85 per cent of the practicing physicians of Westchester are society members.

The General Practitioner's Section of the society held its second meeting on November 13, at the New York Hospital Westchester Division, in White Plains. The guest speaker was Dr Archibald Malloch, librarian of The New York Academy of Medicine. Dr Malloch spoke on "Sur William Osler."

Dr Frank Newton Irwin, 75, of White Plains who died on November 11 was a past-president of the New York Ophthalmological Society.

Deaths of New York State Physicians

Name	Age	Medical School	Date of Death	Residence
Willis S Cobb	78	Albany	October 5	Corning
William F Cunningham	51	Yale	November 19	Manhattan
Frank LeC Dowe	73	N Y Hom	November 18	Manhattan
Willard D Duckworth	57	N Y Hom	November 10	New Rochelle
Benjamin Escoe	39	Columbian	September 22	Manhattan
Leonard K. Graves	84	Pennsylvania	November 12	Manhattan
Frank N Irwin	75	P & S N Y	November 11	Elmhurst
Samuel T King	83	P & S N Y	November 23	White Plains
Henry T Lee	68	Cincinnati	November 17	Baldwin
Simon J Mason	31	Albany	November 12	Manhattan
Peter McPartlon	68	Buffalo	November 20	Manhattan
George W Roos	73	L I C Hosp	November 5	Schenectady
Frank E West	90	P & S N Y	November 21	Wellsville
William R. Williams	73		November 17	Brooklyn
				Manhattan

The Eighteenth Annual Meeting of the American Orthopsychiatric Association, an organization for the study and treatment of behavior and its disorders, will be held at the

Hotel Pennsylvania New York City, on February 20, 21, and 22, 1941. A registration fee will be charged for nonmembers. Preliminary program will be sent on request.

Medical Expense Fund of New York, Inc.

IN THE press of November 15, 1940, there was a news item reporting a public meeting in the Brooklyn Academy of Music at the instance of the Medical Expense Fund of New York, Inc. Two thousand physicians from seventeen counties of the state, it was announced, are affiliated with the project. The corporation has started to sell policies to employed groups.

At the regular meeting of the Kings County Medical Society held at the Society building, 1313 Bedford Avenue, Brooklyn, November 19, 1940, the medical society went on record as approving the Medical Expense Fund of New York, Inc. This approval did not preclude the consideration of other medical expense plans which might be presented to the society.

The New York *Herald Tribune* published the following editorial on November 16, 1940

"ANOTHER MEDICAL PLAN"

"There are unmistakable limitations in the plan launched by the Medical Expense Fund, Inc., to provide medical care up to a value of \$500 for those of small incomes. Families that must live on \$1,000 a year or less cannot be reached because they cannot make the prepayments called for, which means that the vital

problem of widely distributing medical care is not touched. The patient who can prepay must choose a doctor on the Medical Expense Fund's rolls, though that doctor may not have the privileges of a good voluntary hospital.

"It has long been apparent to teachers in the great medical schools and to reformers that the hospital is the logical practitioner of medicine. To be sure, it does have its 'outpatient' department where the very poor of the large cities may receive excellent service. As the law and the policy of organized medicine stand, it may not compete with the private practitioner, so that it becomes a special kind of hotel for those who can afford to pay for accommodation in quarters that are not given over to the free wards. Medicine is so ramified, so complex, that no one man can possibly master it. To send patients to specialists and laboratories—the present method even in cases which are not difficult—is simply to pile up expense that the low-income group can not meet. Only the pooled attention of a group of physicians, with laboratories at their back, can solve the problem. Yet instead of removing obstructions that now prevent the practice of medicine by teams of specialists and laboratory technicians and the extension of the three-cents-a-day plan of the Associated Hospitals to include medical care, the existing unsatisfactory system, with its emphasis on free choice, is held out as the only one that the public should have."

CHRISTMAS IN ENGLAND—WHAT WILL IT BE LIKE?

Great Britain has made no secret of its fear of widespread epidemics in the cold, wintry months ahead. Crippled water supply systems, damp air-raid shelters, shattered homes and bombed hospitals contribute to the growing menace of sickness and disease. Britain's limited store of medical and surgical equipment is being dangerously depleted.

Britain's Civilian Wounded Are Crying for Your Help

The Medical and Surgical Supply Committee of America, with headquarters at 420 Lexington Avenue, New York City, composed of more than 265 physicians and surgeons in principal cities throughout the United States, is calling upon all doctors and their friends to contribute toward purchasing 1,000 emergency operating sets in khaki canvas rolls and 1,000 fitted first-aid metal cases to be shipped to Great Britain *before Christmas!*

The price, insurance and delivery of these units to England is

1 emergency operating unit	\$200 00
1 first-aid fitted case	\$ 70 00

Each set will bear a plate with the donor's name if desired

PLEASE SEND YOUR CONTRIBUTIONS TODAY TO ARTHUR KUNZINGER
TREASURER, MEDICAL AND SURGICAL SUPPLY COMMITTEE OF
AMERICA, 420 LEXINGTON AVENUE, NEW YORK CITY

Medicolegal

LORENZ J. BROSNAN, ESQ
Counsel, Medical Society of the State of New York

Charitable Hospitals—Liability for Malpractice of Physician

CERTAIN interesting legal principles involving the responsibility of hospitals for the acts of physicians came under the scrutiny of the courts recently in a case that has been the subject of protracted litigation in the courts of this state.* The defendant in the action was a charitable, not-for-profit institution maintaining a medical school and a hospital. In 1938 the plaintiff came to the hospital and underwent a tonsillectomy at the free clinic attached to the hospital. She claimed that the operation was improperly performed by the doctor assigned to the care of her particular case and that she sustained serious personal injuries as a result. The complaint charged that the hospital was negligent because it permitted a physician to operate upon the plaintiff, who was not fit or properly qualified to perform the operation, and that it permitted him to so operate without making a proper and adequate examination to determine his compensation.

The action was commenced more than two years and less than three years after the operation. The first legal point which caused the case to be taken to the Appellate Courts was an application to dismiss the complaint on the grounds that the case was barred by the two-year statute of limitations governing malpractice actions rather than the three-year statute of limitations applicable to ordinary negligence cases. The Appellate Division of the Supreme Court determined that the three-year statute of limitations was controlling, and in denying the motion to dismiss the complaint and reversing the decision of the lower court, said in the opinion in part as follows:

"In our opinion the act which is the basis of this action is not the malpractice of the doctor, but defendant's negligence in selecting him when it knew or should have known that he was not qualified to perform the operation. That is the charge made against the hospital both by the allegations of the complaint and by the terms of the stipulation entered into between the parties. Defendant may be held liable only for its negligence in selecting the doctor, not for the latter's negligence or malpractice in performing the operation (citing case). In other words, a charitable institution which makes a doctor available for the patient's use is not liable for malpractice. It is in no sense an employer or principal. Hence it cannot be held to answer for the doctor's negligence or malpractice. It may be held liable only for its negligence in selecting doctors who are incompetent and unfit to perform the work assigned to them. There is a clear factual and legal distinction between a doctor's liability for malpractice and a hospital's liability for its negligence.

"If the allegations of the complaint be established, then the negligence of the hospital in selecting the doctor and the malpractice of the doctor in performing the operation were concurrent causes in producing a single wrong or injury to plaintiff, for which she may recover against the hospital. The fact that plaintiff has suffered a single wrong or injury to her person, while it may authorize only one recovery, does not necessarily give rise to a single cause of action. It may give rise to several causes of action, 'and, in determining which period of limitation applies to a particular cause of action, the criterion is the origin and nature of the liability asserted' (citing case). Here the origin and nature of the wrong alleged give rise to two causes of action one against the doctor for malpractice, and one against the hospital for its negligence in selecting him. The former is governed by the two-year statute and the latter by the three-year statute."

The action then proceeded to trial. The testimony showed that the physician who performed the operation had been licensed to practice medicine for eighteen years and that prior to performing the operation in question, he had engaged during that time in general practice and had performed approximately fifty tonsillectomies before the one complained of. He had on February 1, 1928 entered the defendant hospital for the purpose of taking an eight months' postgraduate course in otolaryngology. The course consisted for the first four months of theoretical work, lectures, examination of patients, diagnoses, and the like, and after that time he was permitted to do operative work under the supervision of more skilled and experienced physicians.

Apparently there was no doubt in the trial that the operation itself was badly performed. The doctor removed not only the tonsils but the uvula and the pillars. The operation was described by the chief of staff as "a butcher's job." The doctor performed the operation at a time when the tonsils were inflamed and took about three hours to perform the surgery, although ordinarily such procedure required about fifteen minutes.

The case was submitted to the jury and a verdict rendered in favor of the plaintiff. Upon appeal to the Appellate Division of the Supreme Court, however, the judgment of the trial court was reversed on the law and the complaint dismissed. That Court came to the conclusion that "while plaintiff's proof was sufficient to show that the doctor who operated upon her was negligent and the injuries she suffered were the result of his negligence, plaintiff failed to establish that at the time the defendant assigned the doctor to perform the operation it knew or should have known that he was incompetent," and that "on the other hand, the uncontradicted proof shows that

* Roewick v. Hospital 254 App. Div. 265 256 App. Div. 957 283 N. Y. 35

Medical Expense Fund of New York, Inc.

IN THE press of November 15, 1940, there was a news item reporting a public meeting in the Brooklyn Academy of Music at the instance of the Medical Expense Fund of New York, Inc. Two thousand physicians from seventeen counties of the state, it was announced, are affiliated with the project. The corporation has started to sell policies to employed groups.

At the regular meeting of the Kings County Medical Society held at the Society building, 1313 Bedford Avenue, Brooklyn, November 19, 1940, the medical society went on record as approving the Medical Expense Fund of New York, Inc. This approval did not preclude the consideration of other medical expense plans which might be presented to the society.

The New York *Herald Tribune* published the following editorial on November 16, 1940

"ANOTHER MEDICAL PLAN"

"There are unmistakable limitations in the plan launched by the Medical Expense Fund, Inc., to provide medical care up to a value of \$500 for those of small incomes. Families that must live on \$1,000 a year or less cannot be reached because they cannot make the prepayments called for, which means that the vital

problem of widely distributing medical care is not touched. The patient who can prepay must choose a doctor on the Medical Expense Fund's rolls, though that doctor may not have the privileges of a good voluntary hospital.

"It has long been apparent to teachers in the great medical schools and to reformers that the hospital is the logical practitioner of medicine. To be sure, it does have its 'outpatient' department where the very poor of the large cities may receive excellent service. As the law and the policy of organized medicine stand, it may not compete with the private practitioner, so that it becomes a special kind of hotel for those who can afford to pay for accommodation in quarters that are not given over to the free wards. Medicine is so ramified, so complex, that no one man can possibly master it. To send patients to specialists and laboratories—the present method even in cases which are not difficult—is simply to pile up expense that the low-income group can not meet. Only the pooled attention of a group of physicians, with laboratories at their back, can solve the problem. Yet instead of removing obstructions that now prevent the practice of medicine by teams of specialists and laboratory technicians and the extension of the three-cent a-day plan of the Associated Hospitals to include medical care, the existing unsatisfactory system, with its emphasis on free choice, is held out as the only one that the public should have."

CHRISTMAS IN ENGLAND—WHAT WILL IT BE LIKE?

Great Britain has made no secret of its fear of widespread epidemics in the cold, wintry months ahead. Crippled water supply systems, damp air-raid shelters, shattered homes and bombed hospitals contribute to the growing menace of sickness and disease. Britain's limited store of medical and surgical equipment is being dangerously depleted.

Britain's Civilian Wounded Are Crying for Your Help!

The Medical and Surgical Supply Committee of America, with headquarters at 420 Lexington Avenue, New York City, composed of more than 265 physicians and surgeons in principal cities throughout the United States, is calling upon all doctors and their friends to contribute toward purchasing 1,000 emergency operating sets in khaki canvas rolls and 1,000 fitted first-aid metal cases to be shipped to Great Britain *before Christmas!*

The price, insurance and delivery of these units to England is

1 emergency operating unit	\$200 00
1 first-aid fitted case	\$ 70 00

Each set will bear a plate with the donor's name if desired

PLEASE SEND YOUR CONTRIBUTIONS TODAY TO ARTHUR KUNZINGER
TREASURER, MEDICAL AND SURGICAL SUPPLY COMMITTEE OF
AMERICA, 420 LEXINGTON AVENUE, NEW YORK CITY

Woman's Auxiliary

To the Medical Society of the State of New York

YOUR publicity chairman is striving to bring to you in each issue of the JOURNAL a full report of the work being carried on in our Auxiliary. Endeavoring as we are to become a progressive unit in the national organization of physicians' wives, it is most important that we become well informed as to the activities in our own state. Any suggestions as to how this can be done more effectively would be sincerely appreciated by your chairman of publicity, Mrs. F. Leslie Sullivan, 16 Sunnyside Road, Scotia, New York.

County News

Fulton County Mrs. M. F. Drury, of Gloversville, was hostess to thirty-five members at the monthly meeting of the auxiliary. Mrs. R. J. Lebowich ably reviewed *As I Remember Him*, a biography of Dr. Hans Zinsser. The report of the Red Cross Committee proved that good work is being done by the auxiliary, and it was voted to give \$5.00 to the local chapter. A Christmas party will be held December 17, and in January the Medical Society will join the auxiliary for a social meeting.

Jefferson County On November 14 the auxiliary and friends enjoyed an interesting lecture by Miss Elizabeth F. Allen, supervisor of application and service division of the Onondaga County Public Welfare. Her topic was "The Effect of Unemployment on Family Life." Headed by Mrs. John M. Rice, a committee composed of auxiliary members is being of excellent assistance in the Christmas Seal mail campaign. This is an endeavor well worthwhile for auxiliaries anxious to do work for their counties.

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McD. Halsey, whose enlightening talk on "Medical Aspects of War in Regard to the Physicians" was most informative. He presented a clear picture of the great variety of duties which face the doctor in military life. A Christmas charity fund made up of donations by the members is to be presented to the Oswego County Health Camp, maintained for undernourished children. It is hoped to make this an annual gift. Twenty members were present, which is a good attendance, for the members in Oswego come from a widespread area.

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Schenectady County A meeting to which each member invited a guest was held November 26 in Schenectady at the Sunnyview Hospital. Mrs. A. W. Greene presided. The Red Cross has assigned the auxiliary one morning a week when full charge will be assumed by auxiliary members. Guest speakers for the afternoon were Dr. F. Leshe Sullivan who spoke on "The Medical Preparedness Program of the Schenectady County Medical Society" and Mrs. Patrick J. Garey who gave an address on "Current Events and the International Situation."

With these final notes for the year and a prayer in our hearts for peace on earth, good will toward men, we bring best wishes for a Joyous Christmas and greetings for the New Year

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defendant was not negligent in assigning the doctor to perform the operation." The Court also ruled that the fact that the physician might have shown himself to have been negligent in the manner in which he performed the operation upon the plaintiff could not properly be construed as proof of the hospital's knowledge of the doctor's general incompetency prior to the time he

was assigned to perform the particular operation.

The plaintiff appealed to the Court of Appeals and that Court unanimously affirmed the judgment in favor of the hospital, thereby finally establishing that the cause of action charged in the complaint had not been sustained by the plaintiff.

Inquiries

A SHORT time ago your counsel received a letter from a physician seeking advice with respect to a problem stated by him, so far as material, as follows

"Dear Sir

I am in need of legal advice on a case which I handled, and which may be brought to court for malpractice

The patient was struck by an automobile and received lacerations of the scalp, forehead, and bridge of the nose. He was brought to my office by the driver of the car. Since it had been a very rainy day, the patient was covered with mud, but I cleaned his wounds and face generally with Hexylresorcinol, and I thought every speck of dirt was removed. He was given tetanus antitoxin and since his folks, who had been notified of the accident and had appeared in my office, were much worried about the boy and desired the best of care for him, I admitted him to one of the local hospitals. I had meanwhile applied 2 per cent gentian violet to the wound and covered it with sterile dressings. There was at no time any infection, but the wounds on his forehead and the bridge of the nose have become discolored. I believe this to be tattoo marks from the gentian violet which infrequently occurs, but another doctor who has since seen the case claims that the wound was not thoroughly cleaned.

The driver of the car was sued in court and on the strength of a doctor's testimony that the facial and nose disfigurement would be permanent unless corrected by plastic surgery, a judgment for \$1,000 was rendered for the patient. However, the driver of the car has no insurance and is unable to pay. So, in an effort to collect some money for this disfigurement, I am threatened with a malpractice suit.

The question which I would like answered is: Am I liable since a judgment for all damages has already been rendered? Also, is there any basis for a malpractice suit after I treated the patient to the best of my ability and at least thought that all foreign material had been removed and prevented any infection from setting in?"

"Very truly yours,"

Your Counsel's reply was as follows

PULSE VERY ABLE TO BE VARIABLE

"The adult human pulse rate is considerably more variable than many persons think," *Hygeia*, *The Health Magazine* declares

"Extensive and exact studies of the measure-

ment of the heart rate of persons in New York City have shown pulse rates ranging from 55 to 120 beats per minute in a healthy person in a normal 24-hour cycle."

"Dear Doctor

I note that a patient who was injured in an automobile accident was treated by you and that subsequent to said treatment the injured person recovered a judgment against the driver of the car responsible for his injuries. I note, however, that the judgment in the sum of \$1,000 apparently has not been paid due to the fact that the defendant in that action carried no insurance and apparently has no money.

A leading case in the State of New York on the subject in question is the case of *Milks v McIver*, 264 N Y 267, decided in 1934 by the Court of Appeals, our highest State Court. In the *Milks* case a child was injured in an automobile accident and was treated for her injuries at a hospital by the defendant, McIver. After her discharge from his care an action was instituted on her behalf and by the father against the owner and operator of the automobile which had caused the original injury. The said action was settled for a substantial sum. An action was then instituted by the same plaintiffs against the doctor and an application was made to the Court to dismiss the complaint upon the grounds that the said settlement automatically released any claim for malpractice against the doctor. The Lower Court and the Appellate Courts ruled that the settlement necessarily included all the injuries caused by those responsible for the automobile accident and necessarily compensated the plaintiffs for what might have been a claim against the doctor.

It would seem clear under the authority of the *Milks* case that if the judgment against the driver of the car in your case is paid or satisfied you would have a complete technical defense to a malpractice action which may be brought against you by this patient. However, if the said judgment remains unpaid and unsatisfied, it seems to me altogether possible for a malpractice action to be successfully maintained against you, since the theory of the *Milks* case is to prevent a person from obtaining a 'double satisfaction' for a single injury.

While cases from other states may be helpful in connection with this problem, I believe that the *Milks* case referred to above, being a decision by our Court of Appeals, is the principal case upon which your technical defense must stand or fall."

"Yours very truly,"

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Books

Books for review should be sent to the Book Review Department at 1313 Bedford Avenue, Brooklyn, N Y. Acknowledgment of receipt will be made in these columns and deemed sufficient notification. Selection for review will be based on merit and the interest to our readers.

REVIEWED

Virus Diseases of Man By C E van Rooyen, M D, and A J Rhodes, M B Octavo of 932 pages, illustrated New York, Oxford University Press, 1940 Cloth, \$18

During the past few years, progress in the field of virus diseases has been so rapid that even the specialist has difficulty in achieving a comprehensive outlook on the vast literature. The textbook of van Rooyen and Rhodes, therefore, meets the need long felt by all those interested in the subject. It may be said without exaggeration that this work represents one of the best textbooks in medical literature. The completeness and criticism with which this difficult subject has been handled deserve the highest admiration. The first part deals with the general aspects of the subject. The various methods of determining the size of virus particles (ultra-microscopy, ultrafiltration, ultracentrifugalization) are critically reviewed and the nature of viruses discussed. Other chapters contain the methods for the demonstration of elementary bodies, inclusion bodies, the cultivation of virus in vitro and on the chorio-allantois membrane. In the second part the individual virus diseases occurring in human beings, their clinical course, pathology, pathogenesis, prevention, and therapy are discussed. Complete references render the book particularly valuable.

ULRICH FRIDEMANN

Trapping the Common Cold By George S Foster, M D Duodecimo of 125 pages New York, Fleming H Revell Co, 1940 Cloth, \$1.25

This is a layman's handbook of practical advice, the gist of which is that sane living will ward off colds. The author recommends a light diet, moderate exercise, and plenty of fresh air. Certainly no one can be harmed by following his suggestions, and improved health would probably result. The book is written in simple, though not always good, English and is moderately priced.

M PLOTZ

The Harvey Lectures Delivered under the Auspices of The Harvey Society of New York, 1938-1939 Series XXXIV Octavo of 279 pages, illustrated Baltimore, Williams & Wilkins Co, 1939 Cloth, \$4 00

The 1938 series of Harvey Lectures has maintained its usual extremely high standards. This series includes a lecture by Marran on the "Intermediary Metabolism of Steroid Hormones," which is concerned especially with the biochemistry and the clinical implications of such agents as progesterone, pregnadiol estriol, and other related compounds. In a lecture on the "Significance of the Albumin Fraction of Serum," Weech discusses the role of the diet on serum albumin concentration, the pathologic physiology of serum albumin (especially as related to edema

and capillary permeability), and the treatment of its deficiency.

Dr Dubois' lecture on "Heat Loss from the Human Body" is a summary of a new field of physiologic development which he has been responsible for exploiting in the last ten years. Other authoritative lectures include "Physical Chemistry of Proteins" by Edwin J Cohn, the "Pathology of Rickets" by Park, the "Distribution of Enzymes" by Linderström-Lang, and the "Role of Vitamins in Biological Oxidations" by Albert Szent-Györgyi.

WILLIAM S COLLENS

Good Health and Bad Medicine A Family Medical Guide. By Harold Aaron, M D Octavo of 328 pages New York, Robert M McBride & Co, 1940 Cloth, \$3 00

Good Health and Bad Medicine is written for the lay public and is quite comprehensive in its list of subjects discussed.

First aid, diet, obesity, tonics, colds, constipation, indigestion, patent medicines, etc., are discussed briefly but to the point. The author describes the nature of common ailments in simple language and points out various pitfalls and dangers of self-medication. It is a useful book for quick reference for the average person as well as for physicians. The author is well informed, and his statements are authoritative and reliable.

EUGENE R. MARZULLO

Psychological and Neurological Definitions and the Unconscious By Samuel Kahn, M D Duodecimo of 219 pages Boston, Meador Publishing Co, 1940 Cloth, \$2 00

This book attempts to give a concise and clear description of what is commonly called the unconscious. It is designed to give an abridged explanation of the philosophy of the unconscious and of the psychoanalytic theories and technique. There is a chapter devoted to an extensive bibliography in which are mentioned the most important contributions to this particular field. There is a chapter given to definitions of the most common terms used in psychoanalysis as well as in neurology and psychiatry.

It is a compact book that will prove valuable to the average intelligent layman as well as progressive physicians.

IRVING J SANDS

Tuberculosis and National Health By H Hyslop Thomson, M D Octavo of 259 pages London, Methuen & Co, Ltd, 1939 Cloth, 10/6

This book deals with the tuberculosis problem largely from the epidemiologic and public health points of view. The pathology, clinical course, etc., is scarcely touched upon, and the modern treatment is given the most sketchy reference. The following titles of chapters give an indication

of its contents "Incidence and Significance of Tuberculosis," "Types of Tuberculosis," "Etiology and Infection," "Housing and Tuberculosis," "Milk Supply and Tuberculosis," "The Importance of Early Detection," "Prevention and Contra-Infection," "The Modern Treatment of Tuberculosis," "Care and Employment of the Tuberculous Patient," "Tuberculosis and the Nursing Service."

For its purpose this book undoubtedly is useful, although much of its subject matter has been more fully and adequately presented before.

FOSTER MURRAY

Obstetrical Manikin Practice By Lyle G. McNeile, M.D. Quarto of 111 pages, illustrated. Baltimore, Williams & Wilkins Co., 1939. Cloth, \$2.00

This brief text is intended principally for students of a manikin course in obstetrics. The author emphasizes that the manikin course is the laboratory of clinical obstetrics. In it the student can be shown the various positions and presentations, he can be taught the mechanism of labor, and he can be given detailed instructions in nearly all the various maneuvers and operative procedures used in clinical obstetrics.

The book covers these subjects clearly and concisely. It also includes the newer classifications of the female pelvis and the mechanisms of labor peculiar to them.

Those students who can afford the luxury of an added text in obstetrics for manikin practice should find the book of great value.

ALEXANDER H. ROSENTHAL

An Introduction to Dermatology By Norman Walker, M.D., and G. H. Percival, M.D. Tenth edition. Octavo of 391 pages illustrated. Baltimore, Williams & Wilkins Co., 1939. Cloth, \$7.00

When a book runs into ten editions it has proved its worth. Therefore, very little need be said about this book. The authors state specifically that the book is not a complete system of dermatology but an introduction to the subject.

The more common diseases are completely described. The chapter on dermatitis has been enlarged and the classification simplified. We believe industrial dermatitis should receive more attention. No attempt has been made to take up the subject of syphilis in detail. The reader is referred to other books for this subject. This is also true of the use of x-ray and other physical agents in the treatment of skin diseases.

The book contains 102 plates and ninety-six illustrations, all of which are good and constitute a valuable part of the book. As a handy, concise, and thoroughly practical book on dermatology, it can be recommended to both students and general practitioners.

ALFRED POTTER

Illustrations of Surgical Treatment. Instruments and Appliances By Eric L. Farquharson, M.D. Quarto of 338 pages, illustrated. Baltimore, Williams & Wilkins Co., 1939. Cloth, \$6.50

It has been the aim of the author to make clear to "house surgeons and those reading for higher

examinations" "practical methods of surgical treatment, which are rarely covered in text-books of general surgery." The reviewer feels that the house surgeon will find much of practical value in the excellently illustrated first section on infusions and transfusions. However, about one-third of this book is comprised of a section illustrating surgical instruments. The reviewer fails to see any reason for including such a section, particularly as more up-to-date illustrated catalogs from many instrument houses may be obtained free of charge. The author states he is deeply indebted to Böhler for his knowledge of fractures. Many of Böhler's methods are here illustrated, but personally we much prefer Böhler's own masterful book on this subject.

WILLIAM H. FIELD

Neurology By S. A. Kinnier Wilson, M.D. Edited by A. Niman Bruce, M.D. Volumes I & II. Octavo of 1,838 pages, illustrated. Baltimore, Williams & Wilkins Co., 1940. Cloth, \$21 per set

Perhaps the outstanding event of recent years in neurology is the appearance of S. A. Kinnier Wilson's magnum opus, his textbook on neurology. Unfinished at his death but long in process of collation, his notes were brought together and edited by A. Niman Bruce, of Edinburgh. Much labor has been expended upon it. And the work was brought up to date by the editor.

The genius of Dr. Wilson manifested in his original contributions (notably in the elucidation of the disease named after him and in the studies on the functions and relationships of the basal ganglia), in his original and stimulating points of view, in his clear, concise, and brilliant style, and in his able editorship of the *Journal of Neurology and Psychopathology*, whetted the appetite of many and created a desire and hope that he would one day survey the broad field of neurology and present his views in extenso.

Its scope may be indicated by a brief review of the material. The first volume covers the toxic and infectious processes of the central and peripheral nervous system including the cranial nerves. This includes the specific infections. The second volume is devoted to the degenerative disorders, both inherent and acquired, and includes muscular as well as primarily neurologic diseases.

The treatise is confined exclusively to diseases and disorders affecting the nervous system or related to it. It remains from beginning to end a purely clinical treatise. Unhappily perhaps there is no separate consideration of the function and clinical significance of different regions of the nervous system. There is a brief mention of the vasotrophoneuroses. The work is thorough and as far as it goes is complete. The discussions are critical and reflect the mature and considered points of view of the author. It is throughout a thoroughly personal work. It is one of the finest books in neurology in English since Gowers' notable textbook that really systematized neurology and since the English translation by the Elder Bruce of Oppenheim's textbook. It is indeed a fitting and worthy memorial to a great neurologist.

ISRAEL FREIMAN

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Prize Essays

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Any essay that may win the prize automatically becomes the property of the Medical Society of the State of New York "to be published as it may direct."

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